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INFORMATION PROVIDING SYSTEM FOR PROVIDING
INFORMATION ABOUT SUPPLIERS

BACKGROUND OF THE INVENTION

5 Field of the Invention

The present invention relates to an information providing technology, and more specifically to the information providing technology for providing information about suppliers such as map information, sales record information, sales information, etc. based on a database.

Related Background Art

A relatively large company has a plurality of factories. Each factory has its own ordering systems for parts or materials, and does not understand the situation of the ordering system of other factories. Each factory can purchase parts or materials from different suppliers or the same supplier at different unit prices. In addition, in the above mentioned ordering system, transactions can be made using order sheets and slips of paper in many cases.

A development division of a company has the following problems.

(1) The division is not informed of the parts or materials of other factories.

(2) The division has a small selection of parts and materials.

(3) The division has little information about substitute parts or materials.

(4) The division cannot quickly obtain new product information.

5 A procurement division of a company has the following problems.

(1) The division is not informed of the unit price and the supplier of the same parts or material of each factory.

10 (2) The division has little information about substitute parts or materials.

(3) The division is not informed of the capacity (for example, production type, production, etc.) of a supplier.

15 (4) The division is not informed of the purchase situation of the entire company group.

SUMMARY OF THE INVENTION

20 An object of the present invention is to provide an apparatus and a method capable of easily and quickly providing information about suppliers.

25 To attain this, the information providing system according to the present invention includes a database for linking and storing targets and map information, and display control means for displaying the targets and the map information stored in the database on display means.

In addition, an information providing method according to the present invention includes a storing step for linking and storing targets and map information, and a displaying step for displaying the targets and the map information stored in the database on display means.

Furthermore, the information providing system according to the present invention includes a database storing sales record information, search means for searching the sales record information, and display control means for displaying the sales record information searched by the search means.

The information providing method according to the present invention includes a storing step for storing the sales record information in the database, a searching step for searching the sales record information, and a displaying step for displaying the sales record information searched by the search means on display means.

Furthermore, the information providing system according to the present invention includes a database storing sales information about a supplier provided through a network, and display control means for displaying the sales information about the supplier stored in the database on display means.

Additionally, the information providing method according to the present invention includes a storing

step for storing sales information about a supplier
provided through a network in a database, and a
displaying step for displaying the sales information
about the supplier stored in the database on display
5 means.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a block diagram of the configuration of
the procurement system according to an embodiment of
10 the present invention;

FIG. 2 is a flowchart of the process of the
procurement system according to an embodiment of the
present invention;

FIG. 3 is a block diagram of the configuration of
15 the electronic parts system according to an embodiment
of the present invention;

FIG. 4 shows the outline of the contents of the
database of the electronic parts system;

FIG. 5 is a flowchart of the process of the
20 electronic parts system;

FIG. 6 is a detailed flowchart of the searching
process by parts number shown in FIG. 5;

FIG. 7 is a detailed flowchart of the linking
process shown in FIG. 6;

FIG. 8 is a detailed flowchart the external
25 database information searching process shown in FIG. 5;

FIG. 9 is a detailed flowchart of the exchange

rate information process shown in FIG. 5;

FIG. 10 shows a login screen;

FIG. 11 shows a menu screen;

5 FIG. 12 shows a condition input screen used when a searching process is performed by parts number;

FIG. 13 shows a list screen of a search result by parts number;

FIG. 14 shows a list screen (continued) of a search result by parts number;

10 FIG. 15 shows a detailed screen of a search result by parts number;

FIG. 16 shows a detailed screen (continued) of a search result by parts number;

15 FIG. 17 shows a list screen of a search result of substitute parts by parts number;

FIG. 18 shows a product/article information screen;

FIG. 19 shows a list screen of order schedule information by parts number;

20 FIG. 20 shows a verification unit price history information screen;

FIG. 21 shows a condition input screen when searching by type name;

25 FIG. 22 shows a major classification selection screen when searching external database information;

FIG. 23 shows an intermediate classification selection screen when searching external database

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information;

FIG. 24 shows a condition input screen when searching external database information;

5 FIG. 25 shows a list screen of a search result of external database information;

FIG. 26 shows a parts information screen of a search result of external database information;

FIG. 27 shows a semiconductor and liquid crystal market price screen;

10 FIG. 28 shows an exchange rate currency list screen;

FIG. 29 shows an exchange rate transition screen;

15 FIG. 30 is a block diagram of the configuration of the material system according to an embodiment of the present invention;

FIG. 31 shows the outline of the contents of the database of a material system;

FIG. 32 is a flowchart of the process of the material system;

20 FIG. 33 is a detailed flowchart of the material unit price information process shown in FIG. 32;

FIG. 34 is a detailed flowchart of the material use information process shown in FIG. 32;

25 FIG. 35 is a detailed flowchart of the management unit price information process shown in FIG. 33;

FIG. 36 is a detailed flowchart of the overseas unit price information process shown in FIG. 33;

FIG. 37 is a detailed flowchart of the use information process by parts number shown in FIG. 34;

FIG. 38 is a detailed flowchart of the material cost detailed information process by parts number shown in FIG. 34;

FIG. 39 is a detailed flowchart of the summary information process by material shown in FIG. 32;

FIG. 40 is a detailed flowchart of the specification information process shown in FIG. 32;

FIG. 41 is a detailed flowchart of the color approval information process shown in FIG. 32;

FIG. 42 shows a login screen;

FIG. 43 is a menu screen;

FIG. 44 shows a search screen of the management unit price information process;

FIG. 45 shows a list screen of a search result of the management unit price information process;

FIG. 46 shows a screen of a detailed search result of the management unit price information process;

FIG. 47 shows a search screen of an overseas factory actual unit price information process;

FIG. 48 shows a list screen of a search result of an overseas factory actual unit price information process;

FIG. 49 shows an exchange rate screen of an overseas factory actual unit price information process;

FIG. 50 shows a search screen of a use information

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process by parts number;

FIG. 51 shows a search result screen of a use information process by parts number;

5 FIG. 52 shows a products information screen of a use information process by parts number;

FIG. 53 shows a search screen of a detailed material cost information process by parts number;

FIG. 54 shows a search result screen of a detailed material cost information process by parts number;

10 FIG. 55 shows a products information screen of a detailed material cost information process by parts number;

FIG. 56 shows a search screen of a summary information process by material;

15 FIG. 57 shows a price information screen of summary information process by material;

FIG. 58 shows a weight information screen of a summary information process by material;

20 FIG. 59 shows a search screen of a specification information process;

FIG. 60 shows a list screen of a search result of a specification information process;

FIG. 61 shows a detailed screen of a search result of a specification information process;

25 FIG. 62 shows a search screen of a color approval information process;

FIG. 63 shows a search result screen of a color

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approval information process;

FIG. 64 shows a comment screen of a color approval information process;

FIG. 65 is a block diagram of the configuration of a cost cutting supporting system according to the present invention;

FIG. 66 shows the outline of the contents of a database of a cost cutting supporting system according to the present embodiment;

FIG. 67 is a flowchart of the process of the cost cutting supporting system;

FIG. 68 shows a login screen;

FIG. 69 shows a verification data list screen;

FIG. 70 shows a verification data screen;

FIG. 71 shows a verification data screen;

FIG. 72 shows a verification data screen;

FIG. 73 is a block diagram of the configuration of the procurement record system according to the present embodiment;

FIG. 74 shows the outline of the contents of the database of the procurement record system;

FIG. 75 is a flowchart of the process of the procurement record system;

FIG. 76 is a flowchart of the procurement record searching process;

FIG. 77 shows a login screen;

FIG. 78 shows a menu screen;

FIG. 79 shows a procurement record search screen;
FIG. 80 shows a collection method selection area;
FIG. 81 shows a condition input area and a
condition input auxiliary screen area;

5 FIG. 82 shows a procurement record search result
screen;

FIG. 83 shows a search condition display area;

FIG. 84 shows a collection result area;

10 FIG. 85 is a flowchart of the process of the
procurement record data management system;

FIG. 86 shows a menu screen;

FIG. 87 shows a term processing screen;

15 FIG. 88 is a block diagram of the configuration of
the supplier card information system according to the
present embodiment;

FIG. 89 shows the outline of the contents of the
database of the supplier card information system;

FIG. 90 is a flowchart of the process of the
supplier card information system;

20 FIG. 91 is a flowchart of the supplier card
information searching process;

FIG. 92 shows a login screen;

FIG. 93 shows a menu screen;

25 FIG. 94 shows a supplier card information search
screen;

FIG. 95 shows a supplier card information search
result screen;

FIG. 96 shows the correspondence between a year, a corporation, and a supplier:

FIG. 97 is a block diagram of the configuration of the supplier map system according to the present
5 embodiment;

FIG. 98 shows the outline of the contents of the database of the supplier map system;

FIG. 99 is a flowchart of the process of the supplier map system;

10 FIG. 100 shows a login screen;

FIG. 101 shows a registration status display screen;

FIG. 102 shows a factory (machining ordered) search screen;

15 FIG. 103 shows a search condition/result display screen;

FIG. 104 shows a help screen;

FIG. 105 shows a map display screen;

FIG. 106 shows a factory information screen;

20 FIG. 107 shows a secondary machining screen;

FIG. 108 shows a path search (selection) screen;

FIG. 109 shows a path search (input) screen;

FIG. 110 shows a path display screen;

25 FIG. 111 is a block diagram of the configuration of the supplier sales system according to the present embodiment;

FIG. 112 shows the outline of the contents of the

FIG. 113 is a flowchart of the supplier sales information registration process;

5 FIG. 115 shows a parts information registration
screen;

FIG. 117 shows a replacement (substitution)
10 information registration screen;

FIG. 119 shows a clerk information registration screen;

FIG. 121 is a flowchart of the process of the supplier sales system;

20 FIG. 123 shows a menu screen;

FIG. 125 shows a sales information detailed screen;

FIG. 126 shows a substitute parts information
25 search screen;

FIG. 127 shows a code help screen;

FIG. 128 shows a substitute parts information list

screen;

FIG. 129 shows a welcome news information list screen;

5 FIG. 130 shows a welcome news information search screen;

FIG. 131 shows a welcome news information detailed screen;

FIG. 132 shows a clerk information search screen;

FIG. 133 shows a clerk information list screen;

10 FIG. 134 shows a clerk information detailed screen;

FIG. 135 is a block diagram of the configuration of the bulletin board e-mail system according to the present embodiment;

15 FIG. 136 is a flowchart of the process of the bulletin board information providing system;

FIG. 137 is a detailed flowchart of the computer conference process;

20 FIG. 138 is a detailed flowchart of a process by category;

FIG. 139 shows a login screen;

FIG. 140 shows a menu screen of the bulletin board information providing system;

25 FIG. 141 shows a menu screen of the computer conference;

FIG. 142 shows a screen by category;

FIG. 143 shows a opinion contents screen;

FIG. 144 shows a response screen;

FIG. 145 shows a new opinion screen;

FIG. 146 shows a registration screen;

FIG. 147 shows a member list screen;

5 FIG. 148 shows a conference information screen;

FIG. 149 shows a detailed screen of conference information;

FIG. 150 is a flowchart of the process of a supplier evaluation system;

10 FIG. 151 shows an evaluation input screen of a supplier;

FIG. 152 is a flowchart of the process of a supplier evaluation system;

15 FIG. 153 shows a supplier evaluation result screen;

FIG. 154 is a block diagram of the configuration of an entire parts number system according to the present embodiment;

20 FIG. 155 shows the outline of the contents of the database of the entire parts number system.

FIG. 156 is a flowchart of the process of the entire parts number system;

FIG. 157 shows a login screen;

FIG. 158 shows a menu screen;

25 FIG. 159 shows a purchase (verification) record latest information search screen;

FIG. 160 shows a purchase (verification) record

latest information list screen;

FIG. 161 shows a purchase (verification) record history information screen;

5 FIG. 162 shows a unit price history latest information search screen;

FIG. 163 shows a unit price history latest information list screen;

FIG. 164 shows a unit price history information screen;

10 FIG. 165 shows an order schedule information search screen;

FIG. 166 shows an order schedule information list screen;

15 FIG. 167 shows an exchange rate latest information list screen;

FIG. 168 shows an exchange rate history information screen; and

FIG. 169 shows a code help screen.

20 DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Hereafter, embodiments of the present invention will be described based on drawings. FIG. 1 is a block diagram showing configuration of procurement system (the Procurement Information Providing System) 13 and
25 purchase system 21 according to the embodiments of the present invention. Purchase system 21 has ordering system 22 and product management system 23.

Procurement system 13 has parts information system (the Parts Information Providing System) 11, cost cutting support system 5, procurement record system 6, supplier system 12, supplier sales system 9 and bulletin board mail system 10. Parts information system 11 has electronic parts system 1, material system 2, mechanical parts system 3 and all part number system 4. Supplier system 12 has supplier card information system 7 and supplier map system 8.

Electronic parts system 1 has data base (hereinafter recited as D/B) 1a, material system 2 has D/B 2a, mechanical parts system 3 has D/B 3a, all part number system 4 has D/B 4a, cost cutting support system 5 has D/B 5a, procurement record system 6 has D/B 6a, supplier card information system 7 has D/B 7a, supplier map system 8 has D/B 8a, and supplier sales system 9 has D/B 9a. It is not absolutely necessary to prepare these databases 1a to 9a for each individual system, but they may be shared as a single database by the systems. Preparing databases individually allows search in a database at high speed, and sharing a database allows waste of having overlapping data to be eliminated.

Electronic parts system 1 is a system providing a user with electronic parts (including semiconductors) procurement information (including spec and quality information). Material system 2 is a system providing

a user with procurement information on materials for molds and press parts. Mechanical parts system 3 is a system providing a user with procurement information on mechanical parts. All part number system 4 is a system
5 providing a user with procurement information on all part numbers (all parts). Cost cutting support system 5 is a system providing a user with price difference information on the same parts or material among businesses. Procurement record system 6 is a system
10 providing a user with aggregation information on procurement records of the user's own group. Supplier card information system 7 is a system providing a user with card information on a supplier (supplier information). Supplier map system 8 is a system
15 providing a user with map information (location information) on a supplier, facilities held by a supplier (processing facilities) and its business relationships with other companies (secondary subcontractor). Supplier sales system 9 is a system
20 providing a user with sales information registered by suppliers and manufacturers. Bulletin board mail system 10 is a system providing a user with a variety of information by a bulletin board and mail.

User computer 31 is a personal computer for
25 instance, which can only be used by a registered user. A user is an employee of a particular department of the company for instance, and is allowed to exploit

procurement system 13 by using computer 31. However,
information to be provided is limited according to a
department that the user belongs to. The user may
exploit procurement system 13 by Web browser software
5 (Netscape or Internet Explorer) in computer 31 for
instance.

Procurement system 13 is an information support
system for promptly and efficiently selecting and
procuring parts and materials worldwide. A user can
10 search for procurement information on WWW (world wide
web) from computer 31.

A large company often has a plurality of offices,
and orders for parts or materials are received and
placed by each individual office on its own. The
15 respective offices may purchase parts or materials at
different prices from different suppliers or the same
supplier. Ordering system 22 acquires trade
information on the offices and allows parts or
materials to be purchased at prices as low as possible
20 based on such trade information. Ordering system 22
also allows large quantities of parts or materials to
be purchased at low prices by collectively receiving
and placing orders of the offices. To be more
specific, ordering system 22 accesses parts information
25 system 11, cost cutting support system 5 and
procurement record system 6 and receives and places
orders from and to computer 32 of the supplier.

Procurement system 13 can meet the following requirements in a development department of a company.

- (1) To know parts and materials used by other offices.
(2) To select most suitable parts and materials from
5 wide-ranging information. (3) To acquire information
on substitutive parts. (4) To acquire new product
information early.

Also, procurement system 13 can meet the following requirements in a procurement department of a company.

- 10 (1) To know purchase unit prices and suppliers of the
offices as to the same parts and materials. (2) To
know information on substitutive parts promptly. (3)
To know ability (produced types and quantity, for
instance) and situation of a supplier. (4) To know
15 purchase situation of the entire group of the company.

Procurement system 13 can input data from external
D/B 34 and register it on databases 1a to 9a. External
D/B 34 may be, for instance, the SEMICONDUCTOR INDUSTRY
NEWS issued by Sangyo Times, Inc., an external database
20 (electronic device information service), products or
parts catalog information or a database of the offices.

Supplier computer 32 is operated by a person in
charge of a supplier and provides card information, map
information and sales information to supplier card
25 information system 7, supplier map system 8 and
supplier sales system 9 respectively.

Computer 33 is operated by an information provider

and provides a variety of information to bulletin board mail system 10.

User computer 31, information provider computer 33, supplier computer 32 and external D/B 34 are
5 connected to procurement system 13 via a network such as LAN or WAN.

FIG. 2 is a flowchart showing processing of procurement system 13. A user can start procurement system 13 by logging in from computer 31. Step S1
10 displays a menu of a procurement system on user computer 31. The user can select as a menu item any of the electronic parts system, material system, mechanical parts system, all part number system, cost cutting support system, procurement record system,
15 supplier card information system, supplier map system, supplier sales system and bulletin board mail system, and step S2 determines which system is selected, and according to that selection, it proceeds to steps S3, S4, S5, S6, S7, S8, S9, S10, S11 and S12 respectively
20 and performs a process of each individual system.

Hereafter, the systems in procurement system 13 will be described.

[1. Electronic parts system]

FIG. 3 is a block diagram showing configuration of electronic parts system 1 illustrated in FIG. 1.
25 Electronic parts system 1 has Web server 1001, application server 1002, Web DB server 1003, image

server 1004, CD changer 1005, operation machine 1006, DB server for update 1007 and magnetic tape device 1008. DB server 1003 has D/B 1a (FIG. 1).

User computer 31 is a standard personal computer as a client for instance, and is capable of accessing electronic parts system 1. External D/B 1012 has electronic parts specification information and catalog image information. Catalog image information is image information that is a catalog printed on paper read by an image scanner. Such information is provided to electronic parts system 1 via a CD-ROM or a network. Electronic parts specification information is provided to operation machine 1006. Catalog image information is provided to CD changer 1005.

Information source 1015 has recommendation information on electronic parts such as semiconductor parts and general electronic parts, and that information is supplied to operation machine 1006 via a floppy disk or a network. Information source 1016 has quality authorization information on electronic parts such as semiconductor parts and condensers, and that information is supplied to operation machine 1006 via a floppy disk or a network. Information source 1017 (Personnel Department) has personnel data, and that data is supplied to operation machine 1006 via a floppy disk or a network. Personnel data includes information on personnel change, and electronic parts system 1 can

automatically change a department to which a registered user belongs. It can also erase registration of the changed user as required. Semiconductor industry newspaper 1018 has market price information of semiconductor/liquid crystal in Japan, and that information is supplied to operation machine 1006 via an operator's maintenance or a network. In addition, information on substitutive parts for semiconductors on sale is supplied to operation machine 1006 via a magnetic tape or a network. Operation machine 1006 registers such information on D/B 1a in DB server 1003. Moreover, personnel data provided by information source 1017 is not only provided to electronic parts system 1 but also provided likewise to other systems such as material system 2.

Factory and production relation company 1014 has verification information, order schedule information, unit price history information, composition information, product name information, substitutive parts information, general purchase verification information, material master information and so on. Such information is data-processed by data processing department 1013, and is supplied to magnetic tape device 1008 by a magnetic tape cartridge. Moreover, it may also be performed by a method of transferring data via a network. Operation machine 1006 registers information in the cartridge read by magnetic tape

device 1008 on D/B 1a in DB server 1003.

Moreover, the above information should desirably be provided online to operation machine 1006 via a network.

5 Also, operation machine 1006 requests factory and production relation company 1014 to examine a part number or a type number, receives the examination results from factory and production relation company 1014 and registers them on D/B 1a in DB server 1003.

10 Operation machine 1006 requests DB server for update 1007 to update D/B 1a. DB server for update 1007 creates a data file accordingly and supplies it to operation machine 1006. Operation machine 1006 updates D/B 1a in DB server 1003.

15 Image server 1004 supplies catalog image information read from a CD-ROM by CD changer 1005 to Web server 1001 and application server 1002. Catalog image information can be registered on D/B 1a in DB server 1003.

20 User computer 31 makes various requests to Web server 1001 and receives its responses. Web server 1001 makes various requests to application server 1002 and receives its responses. Application server 1002 makes various requests to DB server 1003 and receives
25 its responses. Web server 1001 stores a computer program and displays a unified menu for a user to select according to the computer program. Application

server 1002 stores a computer program and operates electronic parts system 1 according to the computer program. DB server 1003 has D/B 1a and manages registration, deletion, update and search of that D/B 1a.

FIG. 4 is a schematic diagram showing configuration of D/B 1a in DB server 1003. D/B 1a has part number verification achievement information 1aa, product order information 1ab, order schedule information 1ac, procurement window contact destination information 1ad, substitutive parts by part number information 1ae, entire departments' master unit price information 1af, part quality authorization information 1ag, recommendation parts information 1ah, semiconductor/liquid crystal market price information 1ai, parts specification information 1aj, part substitutive parts information 1ak, catalog original information (catalog image information) 1al, exchange rate information 1am, user (user ID, password, user's belonging department, etc.) information 1an and security information 1ao.

FIG. 5 is a flowchart showing processing of electronic parts system 1, and corresponds to step S3 in FIG. 2. Step SAA1 displays a screen shown in FIG. 10 on user computer 31 waiting for input of a user ID and input of a password. A user can enter a user ID in area 1101 in FIG. 10 and a password in area 1102.

Security can be enhanced and a log-in by an illicit person can be prevented by having user ID 1101 and password 1102 entered.

5 The following two measures are taken in order to enhance security as displayed in display area 1105. (1) In the case where there is no access (log-in) for 90 calendar days, the right to access (the right to log in) is automatically erased. In that case, an application for utilization must be submitted again on
10 utilization. (2) A user must change a password once a month for security protection. A password can be changed by clicking on password change button 1104 with a mouse.

Moreover, these two processes for enhanced
15 security are also performed in other systems such as the material system in addition to the electronic parts system.

If a user clicks on log-in button 1103 with a mouse, and if the entered user ID and password are
20 correct, the user is logged in and proceeds to step SAA2.

Step SAA2 displays a menu screen shown in FIG. 11. Display area 1111 indicates a date of information. Display area 1112 indicates a log-in user ID (user ID).
25 Display area 1113 indicates a date of log-in. Display area 1114 indicates an IP address of log-in. Based on this IP address, the department to which the user

belongs can be identified. As the source can be identified by the displays of display areas 1112 to 1114 when a hard copy of the screen is made, it is possible to prevent leakage of information to outside.

5 To be more specific, there is an effect of keeping a user from making a hard copy since information on users who made a hard copy is displayed. In addition, display of "This information should not be presented to anyone outside the company" in display area 1115 can prevent leakage of information to outside.

10 Menu items 1116 displays "1. Search by part No.", "2. Search by type name", "3. External DB information search", "4. Search by part No. of substitutive part No. (display of No. of a substitutive part) by base and
15 by parent part number", "5. Unit price master change information list", "6. Unit price master history information search", "7. Order schedule information search by part No.", "8. Order schedule information search by type name", "9. Substitutive (in character)
20 part information search by type name", "10. Search by semiconductor and liquid crystal market price", "61. Exchange rate information", "SU1. User maintenance" and "SU2. Pre-reference information".

25 A user maintenance process refers to user information and log information registered on a database, and registers user information and security management. A pre-reference information process sets

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up information required for system operation.

Display area 1117 indicates the following two items for enhanced security. (1) "Commitment to confidentiality: Duplication of information without permission is prohibited. Also, use by any person other than the employee registered as a user is prohibited". (2) "Punishment according to the office regulations: Information on the procurement system should not be presented to anyone outside the company. If you leak it to outside, you will be punished according to the in-house regulations".

A user can select a desirable item out of the above menu items 1116. If the user selects an item, step SAA3 in FIG. 5 checks which number the user has selected. If No. 1 is selected, step SAA4 performs a search process by a part number. If No. 2 is selected, step SAA5 performs a search process by a type name. If No. 3 is selected, step SAA6 performs a search process of external database information. If No. 10 is selected, step SAA7 performs a search process by market prices of semiconductor and liquid crystal. If No. 61 is selected, step SAA8 processes exchange rate information. If any other number is selected, step SAA9 performs a process of that number. Details of the processes of steps SAA4 to SAA8 will be explained hereafter.

FIG. 6 is a flowchart showing details of a search

5 Title area 1125 of FIG. 12 indicates "(1) Search,
condition input screen by part No.". Display areas
1111 to 1115 have the same indication as above.
Display area 1126 displays "Information of having part
number/temporary unit price is not presented", thus
10 masking the information according to the department to
which the user belongs and providing only predetermined
information. For instance, as for users belonging to
the development department, it is possible, by
providing no information on having part
15 number/temporary unit price, to prohibit them from
designing and making trial calculations based on such
information.

Condition input area 1127 can have a user enter a part No., green authorization considering environmental problems (for instance, whether or not there is a hazardous substance, and whether or not there is recycling), recommendation information (inventory situation in the prototype department), purchase origin, country name of origin, item and kind code (for instance, a code indicating a semiconductor), supplier code (for instance, a code of a dealer), supplier name, maker code, maker name, and what minimum or maximum

amount an actual verification unit price is. In addition to a part number, all or part of the above conditions can be entered. The above conditions can be cleared by clicking on clear button 1129 with a mouse.

- 5 If search button 1128 is clicked on with a mouse, it proceeds to step SAB3 via step SAB2, and searches for an electronic part meeting the above entered conditions based on D/B 1a. It then proceeds to step SAB4. Moreover, if search button 1128 is not clicked on but
10 any of buttons 1121 to 1124 is clicked on, it proceeds to step SAB10.

- Step SAB10 is a process in the case where any of buttons 1121 to 1124 is clicked on. If menu button 1121 is clicked on, it returns to step SAA2 in FIG. 5
15 to display a menu screen shown in FIG. 11. If back page button 1122 is clicked on, it returns to a preceding screen display. If log-out button 1123 is clicked on, the procurement system comes to an end. If mail button 1124 is clicked on, mail transmission or a
20 check of received mail can be performed.

- After the above search, step SAB4 displays a screen listing the search results shown in FIG. 13. If any of buttons 1121 to 1124 in FIG. 13 is clicked on, it proceeds to step SAB10 via step SAB5 and performs
25 the same process as above. Display areas 1111 to 1115 and 1126 have the same display as above. List display area 1135 displays information on seven electronic

parts, for instance, as a result of the search. To be more specific, list display area 1135 displays part No. decided by the company, size, type name decided by the maker, maker name, whether or not there is catalog

5 image information, recommendation (prototype inventory situation), quality authorization, base name (office name), supplier name (dealer name), verification date, verification price, currency, verification amount, drawing No., correction No., process and part order.

10 Moreover, as for quality authorization, "YES" is a pass, "CONDITION" is a conditional pass and "NO" is a failure. When catalog image information is "YES", if the "YES" part is clicked on with a mouse, it shows catalog image information based on D/B 1a (FIG. 4).

15 Catalog image information is image information printed on paper that is read by an image scanner.

The screen continues to the right. If scroll bar switch 1137 is clicked on with a mouse, the screen scrolls to the left. If scroll bar switch 1138 is
20 clicked on with a mouse, the screen scrolls to the right and displays the continued screen shown in FIG. 14. List display area 1135 displays window, country of origin, kind, function classification No. in addition to the above.

25 The seven electronic parts in list display area 1135 can be sorted. First, "Part No." is selected for instance as sort item 1132. Next, if sort button 1133

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is clicked on with a mouse, it sorts part No. in order in list display area 1135. It is also possible to select and sort an item other than part No. as a sort item.

5 If "Details screen" is selected as linking screen 1134 shown in FIG. 13 and button 1136 of electronic part No. 6 is clicked on with a mouse, it proceeds to step SAB6 via step SAB5 and searches for detailed information on electronic part No. 6 based on D/B 1a.
10 Next, it proceeds to step SAB7 and displays the screen of detailed information on electronic part No. 6 as shown in FIG. 15. Moreover, it is possible to specify not only the above "Details Screen" but also the same item for linking to screens 1151 to 1154 linked to FIG.
15 16.

 Title area 1141 in FIG. 15 indicates "(1) Search by part No./details screen". Display areas 1111 to 1115 have the same indication as above. Part information area 1144 displays part information
20 including part No., size, process, drawing No., correction No., part name, type name, maker name, country name of origin, function classification, maintenance schedule and removal schedule.
 Specification information area 1145 displays
25 specification information of an external database. In the case there is no specification information, it indicates that there is no specification information as

shown in FIG. 15. In the case there is specification information, it displays specification information as shown in FIG. 25 for instance. The specification information shown in FIG. 25 will be described later.

5 Recommendation part information area 1146 displays recommendation rank (rank of prototype inventory situation), box No. and data registration date. Quality authorization information area 1147 displays quality authorization, comment, function, structure and
10 scale. This screen continues downward.

If scroll bar switch 1142 is clicked on with a mouse, the screen scrolls upward. If scroll bar switch 1143 is clicked on with a mouse, the screen scrolls downward and the continued screen shown in FIG. 16 is
15 displayed. The display screen displays the following in addition to the above. Green authorization information area 1148 displays green authorization information, comment and authorization date. Green authorization information is determined by whether or
20 not friendly to the environment according to presence of a hazardous substance and recycling. Verification/purchase unit price information area 1149 displays base (office), window, part order, verification date, verification amount, master unit
25 price showing an estimated price for reference, verification unit price, verification price, currency, unit price classification, unit price condition,

supplier and item and kind. Moreover, in the case where the user belongs to the development department, no temporary unit price is displayed for the above-mentioned reason.

5 As mentioned above, it is possible to improve search speed by displaying the screen listing search results first and then displaying the details screen of individual electronic part. To be more specific, it is possible to perform necessary display as much as
10 possible on the list screen and then display the details screen of individual electronic part one to one.

 Link to sub-screen area 1150 has the four buttons 1151 to 1154. If any of buttons 1151 to 1154 is
15 clicked on with a mouse, it proceeds to step SAB9 via step SAB8 and performs a link process. Moreover, if any of buttons 1121 to 1124 is clicked on, it proceeds to step SAB10 via step SAB8 and performs the same process as above.

20 FIG. 7 is a flowchart showing details of a link process of step SAB9 shown in FIG. 6. If the first button 1151 in FIG. 16 is clicked on with a mouse, it proceeds to step SAC2 via a branch process of step SAC1 and searches for substitutive parts information based
25 on D/B 1a. Next, step SAC3 displays the substitutive parts list screen shown in FIG. 17.

 FIG. 17 shows the substitutive parts list screen.

Title area 1161 indicates "List of substitutive parts search results by part No." Display areas 1111 to 1115 have the same indication as above. List display area 1163 displays two pieces of substitutive parts

5 information on electronic parts for instance.

Substitutive parts information in list display area 1163 displays part No., size, supplier name, base name, substitutive part No., substitutive size, substitutive

10 supplier name, substitutive type name, substitutive maker name, parent part No., size and parent drawing No. It is possible, by displaying substitutive parts information, to know which is a substitute electronic part for an electronic part in the case where, for instance, the electronic part becomes unavailable.

15 Also, it is possible, by displaying parent part No. and parent drawing No. information, to know which is a product using that electronic part.

The two electronic parts in list display area 1163 can be sorted. First, "Part No." is selected for

20 instance as sort item 1161. Next, if sort button 1162 is clicked on with a mouse, it proceeds to step SAC5 via step SAC4 and sorts the electronic parts in order of Part No. Next, it returns to step SAC3 and displays a list of the electronic parts after sorting in list

25 display area 1163. It is also possible to select and sort an item other than part No. as a sort item.

Moreover, if any of buttons 1121 to 1124 in FIG. 17 is

clicked on, it proceeds to step SAC12 via step SAC4 and performs the same process as step SAB10 in FIG. 6.

5 If the second buttons 1152 in FIG. 16 is clicked on with a mouse, it proceeds to step SAC6 via a branch process of step SAC1 in FIG. 7 and searches for product/article information based on D/B 1a. Next, step SAC7 displays the product/article information screen shown in FIG. 18.

10 FIG. 18 shows the product/article information screen. Title area 1171 indicates "Product/article information (product/article order)". Display areas 1111 to 1115 have the same indication as above. Product/article information display area 1172 displays six pieces of product/article information as to a
15 desired part No. (WA5-0000-000 for instance) for instance. To be more specific, product/article information display area 1172 displays order No., order name, provision, base name, number (number of a subject part), model group and product group. It is possible,
20 by displaying product/article information, to know which is a product or an article using that electronic part. It proceeds to the above step SAC12 thereafter, and performs the processes of buttons 1121 to 1124 in FIG. 18.

25 If the third button 1153 in FIG. 16 is clicked on with a mouse, it proceeds to step SAC8 via a branch process of step SAC1 in FIG. 7 and searches for order

schedule information based on D/B 1a. Next, step SAC9 displays the order schedule information screen shown in FIG. 19.

FIG. 19 shows the order schedule information screen. Title area 1181 indicates "List of information of order schedule by part No." Display areas 1111 to 1115 have the same indication as above. Order schedule information display area 1182 displays six pieces of order schedule information as to a desired part No. (WA5-0000-000 for instance) for instance. To be more specific, order schedule information display area 1182 displays base name, supplier name, type name, maker name, currency, scheduled amount and scheduled money value for each month of the year. It is possible, by displaying order schedule information, to know order amount and order money value of the electronic part for each month in future. It proceeds to the above step SAC12 thereafter, and performs the processes of buttons 1121 to 1124 in FIG. 19.

If the fourth button 1154 in FIG. 16 is clicked on with a mouse, it proceeds to step SAC10 via a branch process of step SAC1 in FIG. 7 and searches for verification history information based on D/B 1a. Next, step SAC11 displays the verification history information screen shown in FIG. 20.

FIG. 20 shows the verification history information screen. Title area 1191 indicates "Verification unit

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price history information (24 generations including the current one with no temporary unit price indication)"

Display areas 1111 to 1115 have the same indication as above. Verification unit price history information

5 display area 1192 displays two pieces of verification unit price history information as to a desired company base (office A for instance) and a desired part No.

(WA5-0000-000 for instance) and a desired supplier (AAA for instance) for instance. To be more specific,

10 verification unit price history information area 1192 displays verification date, verification unit price, verification amount, verification money value, drawing No., correction No., part order and currency. It is possible, by displaying verification unit price

15 information, to know transition in past verification unit prices. It proceeds to step SAC12 thereafter, and performs the processes of buttons 1121 to 1124 in FIG. 20.

If "2. Search by type name" is selected on the menu screen shown in FIG. 11, it proceeds to a search process by type name of step SAA5 shown in FIG. 5, and displays a condition input screen shown in FIG. 21.

Title area 1201 of FIG. 21 indicates "Search by type name/condition input screen". Display areas 1111 to 25 1115 have the same indication as above. Type name, green authorization information, recommendation information, quality authorization information, maker

code, maker name and purchased information can be entered in condition input area 1202. In addition to a type name, all or part of the above conditions can be entered. The above conditions can be cleared by clicking on clear button 1204 with a mouse. If search button 1203 is clicked on with a mouse, it searches for an electronic part meeting the above entered conditions based on D/B 1a and displays the search results. Processing thereafter is the same as step SAA4 of a search process by the above part No.

Moreover, there may be a subtle difference in a type name between one created by external D/B 34 (FIG. 1) and one made by an in-house database. This is because external D/B 34 uses a type name used in a catalog. In this case, electronic information system 1 has the above two kinds of type name information in D/B 1a, and it displays type names of which part of first digits is identical, regarding them as having a high possibility of being the same type name. A user just has to select matching one out of these candidate type names, and so burden of search is reduced. On that occasion, those not matching with the in-house type name are only displayed.

If "3. External D/B information search" is selected on the menu screen shown in FIG. 11, it proceeds to search processing of external D/B information of SAA6 shown in FIG. 5. FIG. 8 is a

flowchart showing details of search processing of external D/B information of step SAA6 shown in FIG. 5. Step SAD1 displays the major classification selection screen shown in FIG. 22. Title area 1211 of FIG. 22 indicates "(3) External D/B information search - major classification". Major classification selection menu 1212 displays "001. Microcomputer", "002 Peripheral/interface", ..., "015 Optical element" and so on. A user can select one out of major classification selection menu 1212. If any of buttons 1121 to 1124 or buttons 1213, 1214 is clicked on with a mouse, it proceeds to step SAD12 via step SAD2. In step SAD12, the same process as above is performed as to menu button 1121, back page button 1122, log-out button 1123 and mail button 1124. When help button 1213 is clicked on with a mouse, it displays help in order to help the user operation. If contact destination button 1214 is clicked, it displays a contact for the electronic part system and contacts of the procurement departments of the factory/production relation company.

If a user selects "015 Optical element" out of major classification selection menu 1212, it proceeds to step SAD3 via step SAD2 and displays the intermediate classification (parts) selection screen of "Optical element" shown in FIG. 23. Selecting intermediate classification following major

classification allows the user to select a desired electronic part easily and promptly. Title area 1221 in FIG. 23 indicates "(3) External D/B information search - intermediate classification". Intermediate classification selection menu 1222 displays "01. LED for communication", "03 Laser diode/array", ..., "07 Photo-interrupter" and so on. The user can select one out of intermediate classification selection menu 1222. If any of buttons 1121 to 1124 or buttons 1213, 1214 is clicked on with a mouse, it proceeds to step SAD12 via step SAD4 and performs the same process as above.

If a user selects "07 Photo-interrupter" for instance out of intermediate classification selection menu 1222, it proceeds to step SAD5 via step SAD4 and displays the condition input screen of "Photo-interrupter" shown in FIG. 24. Title area 1231 in FIG. 24 indicates "(3) Search by type name/condition input screen". Display areas 1111 to 1115 have the same indication as above. Type name, maker, output form, light receiving form, input forward voltage, input forward current and so on can be entered in condition input area 1233. The electronic part system has specification information search items of electronic parts supplied from an external database and creates a condition input screen of which conditions are the specification information items. The user can provide an instruction to search only for the electronic parts

meeting the conditions by entering the specification information conditions.

The above conditions can be cleared by clicking on clear button 1235 with a mouse. If search button 1234 is clicked on with a mouse, it proceeds to step SAD7 via step SAD6, and searches for an electronic part meeting the above entered conditions based on D/B 1a. It then proceeds to step SAD8. Moreover, if any of buttons 1121 to 1124, 1213 and 1214 in FIG. 24 is clicked on, it proceeds to step SAD12 via step SAD6 and performs the same process as above.

Step SAD8 displays the list of search results screen shown in FIG. 25. Title area 1241 in FIG. 25 indicates "(3) List of external D/B search results (spec)". Display areas 1111 to 1115 have the same indication as above. Error display area 1232 displays error contents in case an error occurs to the search results. For instance, if an electronic part meeting the condition cannot be found, it indicates "No applicable data" in error display area 1232. Total No. display area 1242 displays the number (150 for instance) of electronic parts meeting the condition (photo-interrupter for instance). List display area 1246 displays first six photo-interrupters out of 150. To be more specific, list display area 1246 displays specification information such as type name, maker, output form, light receiving form, input forward

voltage and input forward current. If previous list button 1243 is clicked on with a mouse, it displays a list preceding the currently displayed data. If next list button 1244 is clicked on with a mouse, it displays a list next to the currently displayed data. If a start number is entered in the column on the left of start number button 1245 and button 1245 is clicked on with a mouse, it displays a list from that number. If button 1247 of electronic part 1 in list display area 1246 is clicked on, it proceeds to step SAD10 via step SAD9, and searches for part information on electronic part 1 based on D/B 1a. It proceeds to SAD11 thereafter. Moreover, if any of buttons 1121 to 1124 or buttons 1213, 1214 in FIG. 25 is clicked on, it proceeds to step SAD12 via step SAD9 and performs the same process as above.

Step SAD11 displays the part information screen indicating search results as shown in FIG. 26. Title area 1251 of FIG. 26 indicates "(3) List of external D/B search results". Display areas 1111 to 1115 have the same indication as above. Error display area 1232, total No. display area 1242, previous list button 1243, next list button 1244 and start number button 1245 are the same as above. Linking screen area 1134, sort area 1132 and sort button 1133 are the same as those shown in FIG. 13. List display area 1255 displays the same part information as in list display area 1135 shown in

FIG. 13. If "Existence" area 1256 in list display area 1255 is clicked on with a mouse, it displays that catalog image information. If button 1257 of electronic part No. 1 is clicked on, it displays part details information of electronic part No. 1 as shown in FIG. 15 and FIG. 16. It proceeds to step SAD12 thereafter and performs the same process as above.

If "10. Search by semiconductor and liquid crystal market price" is selected on the menu screen shown in FIG. 11, it proceeds to a search process by market prices of semiconductor and liquid crystal of step SAA7 shown in FIG. 5. If a user specifies an item as to semiconductor and liquid crystal, the semiconductor/liquid crystal market price screen shown in FIG. 27 is displayed. Title area 1281 in FIG. 27 indicates "Search by semiconductor/liquid crystal market price/kind list screen". Display areas 1111 to 1115 have the same indication as above. Price display area 1282 displays market prices of seven kinds of a desired item (item A for instance) for instance. To be more specific, it displays kind name, date, lowest market price, highest market price and price trend as to each individual kind. Price trend indicates upward or downward. If button 1283 of each individual kind is clicked on, it displays past price history of that kind. Moreover, if any of buttons 1121 to 1124 in FIG. 27 is clicked on, it performs the same process as

above.

If "61. Exchange rate information" is selected on the menu screen shown in FIG. 11, it proceeds to information processing of exchange rate of step SAA8 shown in FIG. 5. FIG. 9 is a flowchart showing details of information processing of exchange rate of step SAA8. Step SAE1 displays currency list screen shown in FIG. 28. Title area 1261 in FIG. 28 indicates "(61) Exchange rate information/currency list screen".

Display areas 1111 to 1115 have the same indication as above. Currency list display area 1262 displays source currency, target currency, rate and date based on D/B 1a. For instance, 1 Australian dollar (AUD) is 86.04 yen (JPY). For instance, if Australian dollar button 1263 is clicked on, it proceeds to step SAE3 via step SAE2. Moreover, if any of buttons 1121 to 1124 in FIG. 28 is clicked on, it proceeds to step SAE4 via step SAE2 and performs the same process as step SAB10 in FIG. 6.

Step SAE3 displays the exchange rate history screen shown in FIG. 29. Title area 1271 indicates "(61) Exchange rate information (monthly average of the past 120 months)". Display areas 1111 to 1115 have the same indication as above. History display area 1272 displays history of exchange rate from Australian dollar to Japanese yen for the past 120 months based on D/B 1a. It proceeds to step SAE4 thereafter and

performs the same process as above.

It is possible, by displays the exchange rate, to know prices in the case of locally purchasing electronic parts, allowing a comparison between purchasing them locally and purchasing them in Japan to be made. In addition, it allows both a price in a local currency and a price in Japanese yen to be indicated when indicating a unit price of any of the above electronic parts.

As above, electronic parts system 1 can select the most suitable electronic parts in development design and so on. A user in the development department and procurement department can search for a desired electronic part promptly and easily. Cost cutting of electronic parts can be conducted by providing unit price information on electronic parts.

[2. Material system]

FIG. 30 is a block diagram showing configuration of material system (the Material Information Providing System) 2 shown in FIG. 1. Material system 2 has Web server 2001, application server 2002, Web DB server 2003, operation machine 2006 and DB server for update 2007. DB server 2003 has D/B 2a (FIG. 1). User computer 31 is a standard personal computer as a client for instance, and is capable of accessing material system 2.

Information source 2011 has material contract

information such as maker codes and unit prices, and that information is supplied to operation machine 2006. Information source (Personnel Department) 2014 has personnel data, and that data is supplied to operation machine 2006. Personnel data includes information on personnel change, and material system 2 can automatically change a department to which a registered user belongs. It can also erase registration of the changed user as required.

Factory and production relation company 2013 has verification information, order schedule information, product-comprising material information, product name information, resin (MO) material information, metal (PX) material information, verification order schedule information, color approval information, specification information and so on. Such information is supplied to operation machine 2006.

Operation machine 2006 registers such information on D/B 2a in DB server 2003. Moreover, the above information should desirably be provided online to operation machine 2006 via a network.

Operation machine 2006 requests DB server for update 2007 to update D/B 2a. DB server for update 2007 creates a data file accordingly and supplies it to operation machine 2006. Operation machine 2006 updates D/B 2a in DB server 2003.

User computer 31 makes various requests to Web

server 2001 and receives its responses. Web server 2001 makes various requests to application server 2002 and receives its responses. Application server 2002 makes various requests to DB server 2003 and receives
5 its responses. Web server 2001 stores a computer program and displays a unified menu for a user to select according to the computer program. Application server 2002 stores a computer program and operates electronic parts system 2 according to the computer
10 program. DB server 2003 has D/B 2a and manages registration, deletion, update and search of that D/B 2a.

FIG. 31 is a schematic diagram showing configuration of D/B 2a in DB server 2003. D/B 2a has
15 material price information 2aa, past record of material purchase information 2ab, product order information 2ac, past record/estimation of material spending amount (weight) information 2ad, past record of material price information 2ae, estimation of material price
20 information 2af, material specification information 2ag, color approval information 2ah, user information (user ID, password, user's belonging department, etc.) 2ai, security information 2aj and green approval information considering environmental problems 2ak.

25 FIG. 32 is a flowchart showing processing of material system 2, and corresponds to step S4 in FIG. 2. Step SBA1 displays a log-in screen shown in FIG. 42

on user computer 31 waiting for input of a log-in name
(user ID) and input of a password. A user can enter a
user ID in area 2101 in FIG. 42 and a password in area
2102. Security can be enhanced and a log-in by an
5 illicit person can be prevented by having user ID 2101
and password 2102 entered.

A user must change a password once a month for
security protection. A password can be changed by
clicking on password change button 2104 with a mouse.

10 If a user clicks on log-in button 2103 with a
mouse, and if the entered user ID and password are
correct, the user is logged in and proceeds to step
SBA2.

Step SBA2 displays a menu screen shown in FIG. 43.
15 Display area 2111 indicates a date of information.
Display area 2112 indicates a log-in user ID (user ID).
Display area 2113 indicates a date of log-in. As the
source can be identified by the displays of display
areas 2112 and 2113 when a hard copy of the screen is
20 made, it is possible to prevent leakage of information
to outside. Moreover, as with the case of electronic
parts system, an IP address may also be shown in
addition to a user ID and a log-in date.

Menu items 2126 displays "1. Material unit
25 information", "2. Material spending information", "3.
Summary information per material type", "4.
Specification information", "5. Color approval

information", "I. User maintenance" and "II. Preference information". Furthermore, "1. Material unit price information" can be divided into "11. Controlled unit price information", "12. Controlled/substantial unit price information", "13. Actual purchased unit price information" and "14. Overseas unit price information", and "2. Material spending information" can be divided into "21. Spending information per part No." and "22. Itemized material cost information per part No."

Processing of user maintenance refers to user information and log information registered on a database, and registers user information and security management. Processing of preference information sets up information required for system operation.

A user can select a desirable item out of the above menu items 2126. In that case, the user can select it by clicking on MO button 2127 or PX button 2128 and so on with a mouse. MO button 2127 means resin (MO) material. PX button 2128 means metal (PX) material. If the user selects an item, step SBA3 in FIG. 32 checks which number the user has selected. If No. 1 is selected, step SBA4 performs processing of material unit price information. As for its subdivision, as shown in FIG. 33, if No. 11 is selected, step SBA10 performs processing of controlled unit price information, and if No. 12 is selected, step SBA11 performs processing of controlled/substantial

unit price information, and if No. 13 is selected, step SBA12 performs processing of actual purchased unit price information, and if No. 14 is selected, step SBA13 performs processing of oversea unit price information.

In FIG. 32, if No. 2 is selected, step SBA5 performs processing of material spending information. As for its subdivision, as shown in FIG. 34, if No. 21 is selected, step SBA14 performs processing of spending information per part No., and if No. 22 is selected, step SBA15 performs processing of itemized material cost information per part No.

In FIG. 32, if No. 3 is selected, step SBA6 performs processing of summary information per material type. If No. 4 is selected, step SBA7 performs processing of specification information. If No. 5 is selected, step SBA8 performs processing of color approval information. If any other number is selected, step SBA9 performs a process of that number. Details of the processes of steps SBA4 to SBA8 will be explained hereafter. Moreover, while a case of selecting resin (MO) material will be explained as an example, it will also apply to a case of metal (PX) material.

FIG. 35 is a flowchart showing details of processing of controlled unit price information of step SBA10 shown in FIG. 33. This processing can have

controlled unit price information entered, and search
for material. Step SBB1 displays the search screen
shown in FIG. 44 on computer 31. Title area 2136 in
FIG. 44 indicates "11. MO material Controlled unit
5 price information Search screen". Display areas 2112
and 2113 are the same as above.

Search condition input area 2132 can have a user
enter material type, maker code, maker name, grade No.
(material type number), color ID, color No., in-house
10 color No. and controlled price range. In addition to
controlled unit price information, all or part of the
above conditions can be entered. If material type
button 2131 is clicked on, it displays table data 2133
on the right. Table data 2133 displays a list of
15 material types. The user can select No. 3 "ABS" for
instance out of table data 2133. If a button of any
other item is clicked on, it displays table data of
that item of which a selection can be made.

The above conditions can be cleared by clicking on
20 condition clear button 2135 with a mouse. If search
button 2134 is clicked on with a mouse, it proceeds to
step SBB3 via step SBB2, and searches for material
meeting the above entered conditions based on D/B 2a.
It then proceeds to step SBB4. Moreover, if search
25 button 2134 is not clicked on but any of buttons 2121
to 2125 is clicked on, it proceeds to step SBB8 via
step SBB2.

Step SBB8 is a process in the case where any of buttons 2121 to 2125 is clicked on. As with the case of the above electronic parts system, if menu button 2121 is clicked on, it returns to step SBA2 in FIG. 32

5 to display a menu screen shown in FIG. 43. If back page button 2122 is clicked on, it returns to a preceding display screen. If log-out button 2123 is clicked on, the procurement system comes to an end. If help button 2124 is clicked on, it displays the help
10 screen. If mail button 2125 is clicked on, mail transmission or a check of received mail can be performed.

After the above search, step SBB4 displays a screen listing the search results shown in FIG. 45.

15 Title area 2141 indicates "11. MO material Controlled unit price information". Display areas 2112 and 2113 have the same indication as above. List display area 2151 displays information of material meeting the search conditions. To be more specific, list display
20 area 2151 displays material type, maker code, maker name, grade No., color ID, color No., in-house color No. and controlled price range.

Information in list display area 2151 can be sorted. Items are entered in first sort key 2143,
25 second sort key 2144 and third sort key 2145. Thereafter, if sort in ascending order button 2146 is clicked on, information is sorted in ascending order,

and if sort in descending order button 2147 is clicked on, information is sorted in descending order. For instance, it is possible to have it sorted in order of material type, maker code and grade No.

5 It is also possible to display information continued from inside list display area 2151. If previous list button 2148 is clicked on, it can display material information of a preceding number. If next list button 2149 is clicked on, it can display material
10 information of a next number. If a number is entered in the area on the left of button 2150 and button 2150 is clicked on, it can display material information from that number. If any of buttons 2121 to 2125 is clicked on, it proceeds to step SBB8 via step SBB5 and performs
15 the same process as above.

 If, for instance, button 2152 of material No. 1 is clicked on, it proceeds to step SBB6 via step SBB5 and searches for details information of material No. 1 based on D/B 2a. Next, it proceeds to step SBB7 and
20 displays the details information screen of material No. 1 as shown in FIG. 46.

 Title area 2155 in FIG. 46 indicates "11. MO material Controlled unit price details information". Display areas 2112 and 2113 have the same indication as
25 above. Material information area 2158 displays material type, maker code, maker name, grade No., color ID, color No. and in-house color No. Unit price

history information area 2159 displays currency unit, weight unit, limited supplier type, lot type and date and controlled unit price. Specification information area 2160 displays characteristics, use, filler, method (injection), flammability class, thickness, density, water absorption, yield strength, elasticity, flexural strength and so on.

As mentioned above, it is possible to improve search speed by displaying the screen listing search results first and then displaying the details screen of individual material. To be more specific, it is possible to perform necessary display as much as possible on the list screen and then display the details screen of individual material one to one.

Next, if go to menu list button 2156 is clicked on, it returns to step SBB4 to display a list screen shown in FIG. 45. And if go to search menu button 2157 is clicked on, it returns to step SBB1 and displays the search screen shown in FIG. 44. Also, if any of buttons 2121 to 2125 is clicked on in step SBB8, it performs the same process as above.

In FIG. 33, the processing of controlled/substantial unit price information in step SBA11 can perform a search with controlled unit price information or substantial unit price information as a search condition. That search processing is the same as processing of controlled unit price information in

the above step SBA10. Processing of actual purchased unit price information in step SBA12 can perform a search with actual purchased unit price information as a search condition. That search processing is the same
5 as processing of controlled unit price information in the above step SBA10.

If "14. Overseas unit price information" is selected in the menu screen shown in FIG. 43, it proceeds to processing of overseas unit price
10 information of step SBA13 shown in FIG. 33. FIG. 36 is a flowchart showing details of processing of overseas unit price information of step SBA13 shown in FIG. 33. Step SBC1 displays the search screen shown in FIG. 47. Title area 2165 indicates "14. MO material Search of
15 overseas factory actual purchased unit price information". Display areas 2112 and 2113 are the same as above.

In search condition input area 2166, a user can enter code of overseas bases, material type, maker
20 name, grade No., color ID, color No. and in-house color No. In addition to controlled unit price information, all or part of the above conditions can be entered.

The above conditions can be cleared by clicking on condition clear button 2168 with a mouse. If search
25 button 2167 is clicked on with a mouse, it proceeds to step SBC3 via step SBC2, and searches for overseas factory material information meeting the above entered

conditions based on D/B 2a. It then proceeds to step SBC4. Moreover, if search button 2167 is not clicked on but any of buttons 2121 to 2125 is clicked on, it proceeds to step SBC8 via step SBC2. Step SBC8 is the same process as when one of buttons 2121 to 2125 is clicked on as above.

After the above search, step SBC4 displays a screen listing the search results shown in FIG. 48. Title area 2171 indicates "14. MO material Overseas factory unit price information". Display areas 2112 and 2113 are the same as above. List display area 2175 displays overseas factory material information meeting the search conditions. To be more specific, list display area 2175 displays controlled/actual purchased unit price, overseas bases, material type, maker name, grade No., color ID, color No. and in-house color No.

Information in list display area 2175 can be sorted. Items are entered in first sort key 2143, second sort key 2144 and third sort key 2145, and if sort in ascending order button 2146 or sort in descending order button 2147 is clicked on, information is sorted. Also, previous list button 2148, next list button 2149 and start number button 2150 are the same as above. If, for instance, button 2174 of material No. 1 is clicked on, it searches for details information thereon and displays the same details information screen as one shown in FIG. 46. It is

possible to improve search speed by displaying the screen listing search results first and then displaying the details screen of individual material.

5 If any of buttons 2121 to 2125 in FIG. 48 is clicked on, it proceeds to step SBC8 via step SBC5 and performs the same process as above. If go to search menu button 2172 is clicked on, it returns to step SBC1 via step SBC5 and displays the search screen in FIG. 47. If display exchange rate button 2173 is clicked
10 on, it proceeds to step SBC6 via step SBC5 and searches for exchange rate information based on D/B 2a.

Next, step SBC7 displays the exchange rate screen shown in FIG. 49. Title area 2181 indicates "14. MO material Overseas factory unit price Exchange rate".
15 Display areas 2112 and 2113 have the same indication as above. Exchange rate area 2184 displays a currency unit and its exchange rate. For instance, it can display exchange rates of two periods at the time of entering a material unit price. Also an exchange rate
20 of each currency unit can be registered on D/B 2a by entering a currency unit and its exchange rate.

Next, if go to menu list button 2182 is clicked on, it returns to step SBC4 to display the list screen shown in FIG. 48. And if go to search menu button 2183
25 is clicked on, it returns to step SBC1 and displays the search screen shown in FIG. 47. Also, if any of buttons 2121 to 2125 is clicked on, it performs the

same process as above in step SBC8.

If "21 - Spending information per part No." is selected in the menu screen shown in FIG. 43, it proceeds to processing of spending information per part No. of step SBA14 shown in FIG. 34.

FIG. 37 is a flowchart showing details of processing of spending information per part No. of step SBA14 shown in FIG. 34. Step SBD1 displays the search screen shown in FIG. 50. Title area 2191 indicates "21 - MO material spending information per part No. search screen". Display areas 2112 and 2113 are the same as above.

In search condition input area 2192, a user can enter corporation code, classification of bases, part No., supplier code, supplier name, material type, maker code, maker name, grade No., color ID, color No. and in-house color No. In addition to part No., all or part of the above conditions can be entered.

If corporation code button 2196 is clicked on, it displays table data 2193 on the right. Table data 2193 displays a list of corporation codes. A user can select a desired corporation code out of table data 2193. If a button of any other item is clicked on, it displays table data of that item of which a selection can be made.

The above conditions can be cleared by clicking on condition clear button 2195 with a mouse. If search

button 2194 is clicked on with a mouse, it proceeds to step SBD3 via step SBD2, and searches for material spending information meeting the above entered conditions based on D/B 2a. It then proceeds to step SBD4. Moreover, if search button 2194 is not clicked on but any of buttons 2121 to 2125 is clicked on, it proceeds to step SBD10 via step SBD2 and performs the same process as step SBC8 in FIG. 36.

After the above search, step SBD4 displays a screen listing the search results shown in FIG. 51. Title area 2201 indicates "21 - MO material spending information per part No." Display areas 2112 and 2113 are the same as above. List display area 2204 displays material spending information meeting the search conditions. To be more specific, list display area 2204 displays corporation, classification of bases, base, part No., size, process drawing No., supplier code, supplier name, material type, maker code, maker name and grade No. Furthermore, if the screen is scrolled to the right, display area 2204 displays color ID, color No., in-house color No., actual weight, planned weight, actual money value and schedule money value.

Material spending information in list display area 2204 can be sorted. Items are entered in first sort key 2143, second sort key 2144 and third sort key 2145, and if sort in ascending order button 2146 or sort in

descending order button 2147 is clicked on thereafter,
material spending information is sorted. Also,
previous list button 2148, next list button 2149 and
start number button 2150 are the same as above. If any
5 of buttons 2121 to 2125 is clicked on, it proceeds to
step SBD10 via step SBD5 and performs the same process
as above. For instance, if button 2203 of material No.
1 is clicked on, it proceeds to step SBD6 via step
SBD5.

10 Step SBD6 searches for product information on
material of material No. 1 for instance based on D/B
2a. Next, step SBD7 displays the product information
screen shown in FIG. 52. It is possible to know the
products using the material by displaying the screen
15 listing search results first and then displaying
product information of individual material.

Title area 2211 in FIG. 52 indicates "21. MO
material Product information screen". Display areas
2112 and 2113 have the same indication as above.
20 Product information area 2215 displays information of
any product using the above indicated part No (FA2-
8225-000 for instance). To be more specific, product
information area 2215 displays order No. (product No.),
base, order name, number, product group and model
25 group.

Next, if any of buttons 2121 to 2125 is clicked
on, it proceeds to step SBD10 via step SBD8 and

performs the same process as above. If go to menu list button 2212 is clicked on, it returns to step SBD4 via step SBD8 and displays the list screen shown in FIG.

5 51. If go to search menu button 2213 is clicked on, it returns to step SBD1 via step SBD8 and displays the search screen shown in FIG. 50. If go to itemized material cost button 2214 is clicked on, it proceeds to step SBD9 via step SBD8 and performs processing of itemized material cost information by part No. This
10 processing of itemized material cost by part No. is the same as the processing of step SBA15 shown in FIG. 34.

If "22 - Itemized material cost information by part No." is selected in the menu screen shown in FIG. 43, it proceeds to processing of itemized material cost
15 information by part No. of step SBA15 shown in FIG. 34. FIG. 38 is a flowchart showing details of processing of itemized material cost information by part No. of step SBA15 shown in FIG. 34 and step SBD9 shown in FIG. 37. Step SBE1 displays the search screen shown in FIG. 53.
20 Title area 2221 indicates "22 - MO material itemized material cost information by part No. search screen". Display areas 2112 and 2113 are the same as above.

In search condition input area 2223, a user can enter corporation code, classification of bases, part
25 No., supplier code, supplier name, material type, maker code, maker name, grade No., color ID, color No. and in-house color No. In addition to part No., all or

part of the above conditions can be entered.

As in the above case, if corporation code button 2222 is clicked on, it displays table data 2224 on the right, and a desired corporation code can be selected.

- 5 If a button of any other item is clicked on, it displays table data of that item of which a selection can be made.

- 10 The above conditions can be cleared by clicking on condition clear button 2226 with a mouse. If search button 2225 is clicked on with a mouse, it proceeds to step SBE3 via step SBE2, and searches for itemized material cost information meeting the above entered conditions based on D/B 2a. It then proceeds to step SBE4. Moreover, if search button 2225 is not clicked
15 on but any of buttons 2121 to 2125 is clicked on, it proceeds to step SBE10 via step SBE2 and performs the same process as step SBC8 in FIG. 36.

- After the above search, step SBE4 displays a screen listing the search results shown in FIG. 54.
20 Title area 2231 indicates "22. MO material Itemized material cost information by part No." Display areas 2112 and 2113 are the same as above. List display area 2233 displays itemized material cost information meeting the search conditions. To be more specific,
25 list display area 2233 displays corporation, classification of bases, base, part No., size, process drawing No., supplier code, supplier name, material

type, maker code, maker name and grade No.

Furthermore, if the screen is scrolled to the right, display area 2233 displays color ID, color No., in-house color No., weight classification, material unit price, spending material weight, virgin rate (it is 1 if no recycling material is included), defective rate, material management cost rate, other costs, product weight, additional weight (weight required for any part other than product), taken quantity, setup weight and mold lot.

Itemized material cost information in list display area 2233 can be sorted. Items are entered in first sort key 2143, second sort key 2144 and third sort key 2145, and if sort in ascending order button 2146 or sort in descending order button 2147 is clicked on thereafter, itemized material cost information is sorted. Also, previous list button 2148, next list button 2149 and start number button 2150 are the same as above. If go to search menu button 2232 is clicked on, it returns to step SBE1 via step SBE5 and displays the search screen shown in FIG. 53. Also, if any of buttons 2121 to 2125 is clicked on, it proceeds to step SBE10 via step SBE5 and performs the same process as above. Moreover, if button 2234 of material No. 1 is clicked on for instance, it proceeds to step SBE6 via step SBE5.

Step SBE6 searches for product information of

material No. 1 for instance based on D/B 2a. Next,
step SBE7 displays the product information screen shown
in FIG. 55. It is possible to know the products using
the material by displaying the product information on
5 the material.

Title area 2241 in FIG. 55 indicates "22. MO
material Product information screen". Display areas
2112 and 2113 have the same indication as above.
Product information area 2245 displays information on
10 any product using the above indicated part No. (FA2-
8225-000 for instance). To be more specific, product
information area 2245 displays order No. (product No.),
base, order name, number, product group and model
group.

15 Next, if go to menu list button 2242 is clicked
on, it returns to step SBE4 via step SBE8 and displays
the list screen shown in FIG. 54. If go to search menu
button 2243 is clicked on, it returns to step SBE1 via
step SBE8 and displays the search screen shown in FIG.
20 53. If any of buttons 2121 to 2125 is clicked on, it
proceeds to step SBE10 via step SBE8 and performs the
same process as above. If spending information button
2244 is clicked on, it proceeds to step SBE9 via step
SBE8 and performs processing of material spending
25 information by part No. This processing of material
spending information by part No. is the same as the
above processing of step SBA14 shown in FIG. 34.

If "3. Summary information per material type (31 - Summary information per material type)" is selected on the menu screen shown in FIG. 43, it proceeds to processing of summary information per material type of step SBA6 shown in FIG. 32.

FIG. 39 is a flowchart showing details of processing of summary information per material type of step SBA6 shown in FIG. 32. Step SBF1 displays the search screen shown in FIG. 56. Title area 2251 indicates "31. MO material Search menu of summary information per material type Search screen". Display areas 2112 and 2113 are the same as above.

In search condition input area 2252, a user can enter material type, maker code, maker name, grade No., color ID, color No., in-house color No. and base name using the material. In addition to material type, all or part of the above conditions can be entered.

As in the above case, if material type button 2253 is clicked on, it displays table data 2253 on the right, and a desired material type can be selected. If a button of any other item is clicked on, it displays table data of that item of which a selection can be made.

The above conditions can be cleared by clicking on condition clear button 2256 with a mouse. If price button 2254 is clicked on with a mouse, it proceeds to step SBF3 via step SBF2, and searches for material

price information meeting the above entered conditions based on D/B 2a. It then proceeds to step SBF4 and displays the price information screen shown in FIG. 57. On the other hand, if weight button 2255 in FIG. 56 is
5 clicked on with a mouse, it proceeds to step SBF6 via step SBF2, and searches for material weight information meeting the above entered conditions based on D/B 2a. It then proceeds to step SBF7 and displays the weight information screen shown in FIG. 58. Moreover, if any
10 of buttons 2121 to 2125 in FIG. 56 is clicked on, it proceeds to step SBF9 via step SBF2 and performs the same process as step SBC8 in FIG. 36.

FIG. 57 shows the price information screen. Title area 2261 indicates "31. MO material Summary
15 information per material type (price)". Display areas 2112 and 2113 have the same indication as above. Price information area 2264 displays price information meeting the search conditions. To be more specific, price information area 2264 displays maker code,
20 material type, grade No., color ID, color No., in-house color No., base, and price of spending material by month (actual and forecast).

Information in price information area 2264 can be sorted. Items are entered in first sort key 2143,
25 second sort key 2144 and third sort key 2145, and if sort in ascending order button 2146 or sort in descending order button 2147 is clicked on thereafter,

the information is sorted. Also, previous list button 2148, next list button 2149 and start number button 2150 are the same as above. In addition, if go to search menu button 2262 is clicked on, it returns to step SBF1 via step SBF5 and displays the search screen shown in FIG. 56. Also, if weight button 2263 is clicked on, it proceeds to step SBF6 via step SBF5 and searches for weight information, and displays the weight information screen shown in FIG. 58 described next. Moreover, if any of buttons 2121 to 2125 is clicked on, it proceeds to step SBF9 via step SBF5 and performs the same process as above.

FIG. 58 shows the weight information screen. Title area 2271 indicates "31. MO material Summary information per material type (weight)". Display areas 2112 and 2113 have the same indication as above. Weight information area 2274 displays material weight information meeting the search conditions. To be more specific, weight information area 2274 displays maker code, material type, grade No., color ID, color No., in-house color No., base, and weight of spending material by month (actual and forecast).

Information in weight information area 2274 can be sorted. Items are entered in first sort key 2143, second sort key 2144 and third sort key 2145, and if sort in ascending order button 2146 or sort in descending order button 2147 is clicked on thereafter,

the information is sorted. Also, previous list button 2148, next list button 2149 and start number button 2150 are the same as above. In addition, if go to search menu button 2272 is clicked on, it returns to step SBF1 via step SBF8 and displays the search screen shown in FIG. 56. Also, if price button 2273 is clicked on, it proceeds to step SBF3 via step SBF8 and searches for the above price information, and displays the price information screen shown in FIG. 57. Moreover, if any of buttons 2121 to 2125 is clicked on, it proceeds to step SBF9 via step SBF8 and performs the same process as above.

If "4. Specification information (41 - Specification information)" is selected on the menu screen shown in FIG. 43, it proceeds to processing of specification information of step SBA7 shown in FIG. 32. FIG. 40 is a flowchart showing details of processing of specification information of step SBA7 shown in FIG. 32. Step SBG1 displays the search screen shown in FIG. 59. Title area 2281 indicates "41. MO material Specification information Search menu". Display areas 2112 and 2113 are the same as above.

In search condition input area 2282, a user can enter material type, maker code, maker name, grade No., classification of material control, filler, machining method, classification of flammability, hot runner record, MF test condition, melt flow, characteristics

and application (a copying machine for instance). All or part of the above conditions can be entered.

5 If material type button 2283 is clicked on, it displays table data 2284 on the right, and a desired material type can be selected. If a button of any other item is clicked on, it displays table data of that item of which a selection can be made.

10 The above conditions can be cleared by clicking on condition clear button 2286 with a mouse. If search button 2285 is clicked on with a mouse, it proceeds to step SBG3 via step SBG2, and searches for material specification information meeting the above entered conditions based on D/B 2a. It then proceeds to step SBG4. Moreover, if any of buttons 2121 to 2125 is
15 clicked on, it proceeds to step SBG9 via step SBG2 and performs the same process as step SBC8 in FIG. 36.

After the above search, step SBG4 displays a screen listing the search results shown in FIG. 60. Title area 2291 indicates "41. MO material
20 Specification information". Display areas 2112 and 2113 are the same as above. List display area 2293 displays material specification information meeting the search conditions. To be more specific, list display area 2293 displays material type, maker code, maker
25 name, grade No., classification of material control, filler, classification of flammability and so on.

Information in list display area 2293 can be

sorted. Items are entered in first sort key 2143,
second sort key 2144 and third sort key 2145, and if
sort in ascending order button 2146 or sort in
descending order button 2147 is clicked on thereafter,
5 the information is sorted. Also, if go to search menu
button 2292 is clicked on, it returns to step SBG1 via
step SBG5 and displays the search screen shown in FIG.
59. In addition, if any of buttons 2121 to 2125 is
clicked on, it proceeds to step SBG9 via step SBG5 and
10 performs the same process as above. Moreover, if
button 2294 of material No. 1 is clicked on for
instance, it proceeds to step SBG6 via step SBG5.

Step SBG6 searches for material specification
information of material No. 1 for instance based on D/B
15 2a. Next, step SBG7 displays the detailed menu of
specification information shown in FIG. 61. Details
information is provided only in necessary cases by
displaying the screen listing search results first and
then displaying the individual details information so
20 as to improve search speed.

Title area 2301 in FIG. 61 indicates "41. MO
material Detailed menu of specification information".
Display areas 2112 and 2113 have the same indication as
above. Details information area 2302 displays
25 specification details information specified above. To
be more specific, specification information area 2302
displays material type, maker code, maker name, grade

No., classification of material control, filler, machining method, classification of flammability, hot runner record, characteristics and application, and besides, thickness, flexural strength, flexural elasticity and so on.

Next, if go to controlled unit price menu button 2303 is clicked on, it proceeds to processing of controlled unit price information of step SBA10 in FIG. 33. If controlled/substantial unit price information menu button 2304 is clicked on, it proceeds to processing of controlled/substantial unit price information of step SBA11 in FIG. 33. If go to search menu button 2305 is clicked on, it returns to step SBG1 via step SBG8 and displays the search screen in FIG. 59. If go to menu list button 2306 is clicked on, it returns to step SBG4 via step SBG8 and displays the list screen in FIG. 60. If any of buttons 2121 to 2125 is clicked on, it proceeds to step SBG9 via step SBG8 and performs the same process as above.

If "5. Color approval information (51 - Color approval information)" is selected on the menu screen shown in FIG. 43, it proceeds to processing of color approval information of step SBA8 shown in FIG. 32. Color approval is approving by each individual maker as to whether or not a color can be adopted as a unique color representing its product, and only a color determined as a pass can be adopted for a product.

FIG. 41 is a flowchart showing details of processing of color approval information of step SBA8 shown in FIG. 32. Step SBH1 displays the search screen shown in FIG. 62. Title area 2311 indicates "51. MO material Color approval information Search menu".
5 Display areas 2112 and 2113 are the same as above.

In search condition input area 2312, a user can enter judgment control No., material type, maker code, maker name, grade No., maker control No., color No.,
10 color name, judgment result, judgment date, department, attached data and comments. The user can enter all or part of the above conditions.

If material type button 2313 is clicked on, it displays table data 2314 on the right, and a desired
15 material type can be selected. If a button of any other item is clicked on, it displays table data of that item of which a selection can be made.

The above conditions can be cleared by clicking on condition clear button 2316 with a mouse. If search
20 button 2315 is clicked on with a mouse, it proceeds to step SBH3 via step SBH2, and searches for material color approval information meeting the above entered conditions based on D/B 2a. It then proceeds to step SBH4. Moreover, if any of buttons 2121 to 2125 is
25 clicked on, it proceeds to step SBH9 via step SBH2 and performs the same process as step SBC8 in FIG. 36.

After the above search, step SBH4 displays a

screen listing the search results shown in FIG. 63. Title area 2321 indicates "51. MO material Color approval information". Display areas 2112 and 2113 are the same as above. List display area 2327 displays material color approval information meeting the search conditions. To be more specific, list display area 2327 displays whether or not there are comments, judgment control No., maker code, maker name, material type, grade No., maker control No., color No., color name, judgment result, judgment date, department, attached data and so on.

Information in list display area 2327 can be sorted. Items are entered in first sort key 2143, second sort key 2144 and third sort key 2145, and if sort in ascending order button 2146 or sort in descending order button 2147 is clicked on thereafter, the information is sorted. Also, previous list button 2148, next list button 2149 and start number button 2150 are the same as above.

If material radio button 2328 of a material No. is clicked on, that material can be selected. After selection, if a next button is clicked on, it performs processing of the selected material. If comments screen button 2322 is clicked on, it proceeds to step SBH6 via step SBH5, and searches for comments on color approval information of selected material based on D/B 2a. Next, step SBH7 displays the comments screen shown

in FIG. 64. Also, if go to search menu button 2323 in
FIG. 63 is clicked on, it returns to step SBH1 via step
SBH5 and displays the search screen shown in FIG. 62.
If go to controlled unit price menu button 2324 is
5 clicked on, it proceeds to processing of controlled
unit price information of step SBA10 in FIG. 33. If
controlled/substantial unit price menu button 2325 is
clicked on, it proceeds to processing of
controlled/substantial unit price information of step
10 SBA11 in FIG. 33. If go to actual purchased unit price
menu button 2326 is clicked on, it proceeds to
processing of actual purchased unit price information
of step SBA12 in FIG. 33. If any of buttons 2121 to
2125 is clicked on, it proceeds to step SBH9 via step
15 SBH5 and performs the same process as above.

FIG. 64 is the comments screen on color approval
information. Title area 2331 indicates "51. MO
material Comments on color approval information".
Display areas 2112 and 2113 have the same indication as
20 above. Comments area 2332 displays the comments on
color approval information of the material specified
above.

Next, if go to menu list button 2333 is clicked
on, it returns to step SBH4 via step SBH8 and displays
25 the list screen shown in FIG. 63. If go to search menu
button 2334 is clicked on, it returns to step SBH1 via
step SBH8 and displays the search screen shown in FIG.

62. If go to controlled price unit menu button 2335 is
clicked on, it proceeds to processing of controlled
unit price information of step SBA10 in FIG. 33. If go
to controlled/substantial unit price information menu
5 button 2336 is clicked on, it proceeds to processing of
controlled/substantial unit price information of step
SBA11 in FIG. 33. If go to actual purchased unit price
menu button 2337 is clicked on, it proceeds to
processing of actual purchased unit price information
10 of step SBA12 in FIG. 33. If any of buttons 2121 to
2125 is clicked on, it proceeds to step SBH9 via step
SBH8 and performs the same process as above.

Moreover, as with the electronic parts system, it
is possible to display green authorization information
15 considering environmental problems as to each
individual material based on green authorization
information 2ak inside D/B 2a in FIG. 31. For
instance, green authorization information is authorized
considering environmental problems such as whether or
20 not there is a hazardous substance and whether or not
there is recycling. It is also possible to display
which product is using the material having
predetermined green authorization information.

As above, the material system can provide a user
25 with material information. For instance, in the case
where the offices are using materials that are slightly
different only in colors, it is possible to purchase

materials at low costs by unifying the color and purchasing large quantities of materials of the same color. Also, in the case where a certain material becomes unavailable from a manufacturer, it is possible to check inventory at other offices and have the material delivered from other offices.

[3. Mechanical parts system]

Mechanical parts system 3 (FIG. 1) stores mechanical parts information on D/B 3a and provides a user with the information, and has the same system contents as the above electronic parts system 1.

[4. All parts number system]

FIG. 154 is a block diagram showing configuration of all parts number system (all parts number information provision system) 4 shown in FIG. 1. All parts number system 4 has Web server 3001, application server 3002, Web DB server 3003, operation machine 3004 and DB server for update 3005. DB server 3003 has D/B 4a (FIG. 1). User computer 31 is a standard personal computer as a client for instance, and is capable of accessing all parts number system 4.

Factory and production relation company computer 3011 has purchase (verification) record information, unit price history information and order schedule information, and supplies such information to operation machine 3004. Personnel department computer 3012 has personnel data, and supplies that data to operation

machine 3004. Personnel data includes information on personnel change, and all parts number system 4 can automatically change a department to which a registered user belongs. It can also erase registration of the
5 changed user as required.

Operation machine 3004 registers such information on D/B 4a in DB server 3003. Moreover, the above information should desirably be provided online to operation machine 3004 via a network.

10 DB server 3003 manages registration, search, deletion and so on for D/B 4a. On receipt of purchase record information and so on from factory and production relation company computer 3011, operation machine 3004 instructs DB server for update 3005 to
15 update D/B 4a as required. DB server for update 3005 creates a data file for update and supplies it to operation machine 3004. Operation machine 3004 updates D/B 4a in DB server 3003 accordingly.

Application server 3002 stores a computer program
20 and operates all parts number system 4 according to the computer program. Web server 3001 stores a computer program and performs unified screen display according to the computer program. Web server 3001 makes various requests to application server 3002 and receives its
25 responses. Application server 3002 makes various requests to DB server 3003 and receives its responses.

User computer 31 is a standard personal computer

as a client for instance, and is capable of making various requests to Web server 3001 and receiving its responses. User computer 31 can instruct Web server 3001 to search for and view purchase record information on a desired part No. Web server 3001 searches for purchase record information and so on in D/B 4a via application server 3002 and displays that information on the screen of user computer 31. The user can promptly acquire the desired purchase record information.

FIG. 155 is a schematic diagram showing configuration of D/B 4a. D/B 4a has all parts number purchase (acceptance) record information 4aa, unit price history record information 4ab, order schedule information 4ac, exchange rate information 4ad, user information (user ID, password, user's belonging department, etc.) 4ae and security information 4af.

FIG. 156 is a flowchart showing processing of all parts number system 4, and corresponds to processing in step S6 in FIG. 2. Step SCA1 displays a log-in screen shown in FIG. 157 on user computer 31 waiting for input of a user ID and input of a password. A user can enter a user ID in area 3101 in FIG. 157 and a password in area 3102. Security can be enhanced and a log-in by an illicit person can be prevented by having user ID 3101 and password 3102 entered.

A user can change a password for security

protection by clicking on password change button 3104
with a mouse. If a user clicks on log-in button 3103
with a mouse, and if the entered user ID and password
are correct, the user is logged in and proceeds to step
5 SCA2 in FIG. 156.

Step SCA2 displays a menu screen shown in FIG.
158. Display area 3111 indicates a date of
information. Display area 3112 indicates a log-in user
ID (user ID). Display area 3113 indicates a date of
10 log-in. Display area 3114 indicates an IP address of
log-in. Based on this IP address, the department to
which the user belongs can be identified. As the
source can be identified by the displays of display
areas 3112 to 3114 when a hard copy of the screen is
15 made, it is possible to prevent leakage of information
to outside.

If menu button 3121 is clicked on with a mouse, it
displays the menu screen shown in FIG. 158. If back
page button 3122 is clicked on with a mouse, it returns
20 to a preceding screen display. If log-out button 3123
is clicked on with a mouse, the procurement system
comes to an end. If information collecting bases
button 3124 is clicked on with a mouse, it displays
situation of collecting purchase record information and
25 so on base by base. If contact point button 3125 is
clicked on with a mouse, it displays a contact point of
a support window of all parts number system 4 (windows

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of each procurement department). If mail button 3126 is clicked on, mail transmission or a check of received mail can be performed.

Selection item 3131 displays "1. Search of purchase (acceptance) record information (latest/history)", "2. Search of unit price history information (latest/history)", "3. Search of order schedule information" and "4. Search of exchange rate information (latest/history)". If No. 1 is selected, it proceeds to step SCA4 in FIG. 156 and performs search processing of the latest purchase (acceptance) record information. This processing displays the screen shown in FIG. 159. If No. 2 is selected, it proceeds to step SCA7 in FIG. 156 and performs search processing of the latest unit price history information. This processing displays the screen shown in FIG. 162. If No. 3 is selected, it proceeds to step SCA10 in FIG. 156 and performs search processing of order schedule information. This processing displays the screen shown in FIG. 165. If No. 4 is selected, it proceeds to step SCA12 in FIG. 156 and performs processing of the latest exchange rate information list display. This processing displays the screen shown in FIG. 167.

FIG. 159 shows the screen displayed by search processing of the latest purchase (acceptance) record information of step SCA4 shown in FIG. 156. Displays

in display areas 3111 to 3114 and buttons 3121 to 3126 are the same as above. Part No., green approval information, type name (article name), procurement base, country of origin, item code, supplier code, supplier name, maker code, maker name and range of acceptance unit price (local currency) can be entered in search condition input area 3141. The above conditions can be cleared by clicking on clear button 3144 with a mouse. After entering the search conditions, if search button 3143 is clicked on with a mouse, it searches for the latest purchase (acceptance) record information meeting the above search conditions and proceeds to step SCA5 in FIG. 156. Step SCA5 performs processing of the latest purchase (acceptance) record information list display. Moreover, if "Reference" area of each item in condition input area 3141 is clicked on with a mouse, it proceeds to step SCA3 in FIG. 156 and performs code help processing.

FIG. 169 displays another screen to be displayed by code help processing of step SCA3 in FIG. 156. This screen searches for and displays an item code and so on, and makes it easier to enter the above item code in FIG. 159. Table (an item for instance), search item (a code for instance), matching type (a forward match for instance) and input area (input of data that is a key to a search condition) can be entered in search condition area 3251. After entry, if search button

3252 is clicked on with a mouse, it displays items meeting the search condition in search result area 3253. For instance, search result area 3253 displays a list of item codes and their names. If previous list button 3152 is clicked on with a mouse, it displays a list preceding the list currently displayed in search result area 3253. If next list button 3153 is clicked on with a mouse, it displays a list next to the list currently displayed in search result area 3253. If a start number desired to be displayed is entered in input box 3154 and button 3155 is clicked on with a mouse, it displays a list from that start number in search result area 3253. If button 3254 of each item of the search results is clicked on with a mouse, that item is entered in the above condition input area 3141 in FIG. 159.

FIG. 160 shows the screen displayed by processing of the latest purchase (acceptance) record information of step SCA5 shown in FIG. 156. Displays in display areas 3111 to 3114 and buttons 3121 to 3126 are the same as above. As a result of a search for the latest purchase (acceptance) record information meeting the above search conditions, it displays the information in search result area 3162 if applicable information is found, and it indicates "No applicable information" in area 3151 if no applicable information is found. Search result area 3162 displays verification date,

verification price, currency, verification amount,
country of origin, variety, classification of function,
drawing No., correction No., process, order, and
besides, part No., size, type name, maker, whether or
5 not there is an image (using an image of electronic
parts system 1), green authorization information,
recommendation, approval, base, contact point and
supplier. Previous list button 3152, next list button
3153, input box 3154 and button 3155 are the same as
10 above.

To sort the display items in search result area
3162, first sort key 3156, second sort key 3157 and
third sort key 3158 can be entered. Thereafter, if
sort in ascending order button 3159 is clicked on with
15 a mouse, the latest purchase (acceptance) record
information is sorted in ascending order using sort
keys 3156 to 3158 as keys, and if sort in descending
order button 3160 is clicked on with a mouse, the
latest purchase (acceptance) record information is
20 sorted in descending order using sort keys 3156 to 3158
as keys, and displayed in search result area 3162.

On linking screen 3161, a link target when
clicking on No. button 3163 of each of the latest
purchase (acceptance) record information can be
25 selected. As a link target, processing of the latest
purchase (acceptance) record information (step SCA6 in
FIG. 156), processing of the latest unit price

information list display (step SCA8) or processing of
order schedule information list display (step SCA10)
can be selected. For instance, if purchase record
information is selected as linking screen 3161 and No.
5 button 3163 is clicked on with a mouse, it proceeds to
step SCA6 in FIG. 156 and performs processing of the
latest purchase (acceptance) record information
(history information including the latest one) about
that number.

10 FIG. 161 shows the screen displayed by processing
of the latest purchase (acceptance) record information
of step SCA6 shown in FIG. 156. Displays in display
areas 3112 to 3114 and buttons 3121 to 3126 are the
same as above. The above display areas 2111 may also
15 be displayed. History information area 3171 displays
corporation base, contact point, part No., size,
process, item, part name, supplier, subcontractor code,
maker, type name, currency name, article code, and
besides, green authorization information considering
20 environmental problems and acceptance record history
information. The above green approval information
displays approval category, approved name, approval
date and comments. The above acceptance record history
information displays acceptance unit price, acceptance
25 amount, acceptance price, drawing No., correction No.,
small order, order category/name, unit price
category/name, set unit price condition, material cost,

machining cost, control cost, transportation cost, paid category/name and paid amount for each year and month of acceptance. A user can know acceptance record information on each part No. (a part or a material).

5 FIG. 162 shows the screen displayed by processing of search of the latest unit price history record information of step SCA7 shown in FIG. 156. Displays in display areas 3111 to 3114 and buttons 3121 to 3126 are the same as above. Part No., type name, 10 procurement base, supplier code, supplier name, maker code, maker name and range of the latest applied date of unit price history can be entered in condition input area 3181. If "Reference" area of each item is clicked on with a mouse, it proceeds to step SCA3 in FIG. 156 15 and displays code help screen in FIG. 169 described above. The above search conditions can be cleared by clicking on clear button 3184 in FIG. 162 with a mouse. After entering the search conditions, if search button 3183 is clicked on with a mouse, it searches for the 20 latest unit price history information meeting the search conditions and proceeds to step SCA8 in FIG. 156. Step SCA8 performs processing of the latest unit price history information list display.

 FIG. 163 shows the screen displayed by processing 25 of the latest unit price history information list display of step SCA8 shown in FIG. 156. Displays in display areas 3111 to 3114 and buttons 3121 to 3126 are

the same as above. As a result of a search for the latest unit price history information meeting the above search conditions, it displays the information in search result area 3192 if applicable information is found, and it indicates "No applicable information" in area 3191 if no applicable information is found.

Search result area 3192 displays part No., size, process, drawing No., switch date, currency, master unit price, material cost, machining cost, control cost, transportation cost, estimate category code, estimate category name, corporation base, contact point, supplier code, supplier name, nonce code, nonce name, correction No., order, type name, maker name and registration date. Previous list button 3152, next list button 3153, input box 3154, button 3155, sort keys 3156 to 3158, sort in ascending order button 3159, sort in descending order button 3160 and linking screen 3161 are the same as above.

If processing of acceptance history information is selected as linking screen 3161 and No. button 3193 of each of the unit price history information is clicked on with a mouse, it proceeds to step SCA9 in FIG. 156 and performs processing of the unit price history record information (history information including the latest one) about that number.

FIG. 164 shows the screen displayed by processing of unit price history record information of step SCA9

shown in FIG. 156. Displays in display areas 3111 to 3114 and buttons 3121 to 3126 are the same as above. History information area 3201 displays corporation base, contact point, part No., size, process, part name, supplier, subcontractor code, maker, type name, currency name, and besides, green authorization information considering environmental problems and unit price master history information. The above green approval information displays approval category, approved name, approval date and comments. The above unit price master history information displays master unit price, material cost, machining cost, control cost, transportation cost, estimate category code, nonce code, drawing No., correction No., order and registration date for each switch date (of each year). A user can know unit price history record information on each part No. (a part or a material).

FIG. 165 shows the screen displayed by processing of search of order schedule information of step SCA10 shown in FIG. 156. Displays in display areas 3111 to 3114 and buttons 3121 to 3126 are the same as above. As a search condition, part No. 3211 or type name 3212 can be entered. The above search condition can be cleared by clicking on clear button 3214 with a mouse. After entering the search condition, if search button 3213 is clicked on with a mouse, it searches for order schedule information meeting the search condition and

proceeds to step SCA11 in FIG. 156. Step SCA11 performs processing of order schedule information list display.

FIG. 166 shows the screen displayed by processing of order schedule information list display of step SCA11 shown in FIG. 156. Displays in display areas 3111 to 3114 and buttons 3121 to 3126 are the same as above. As a result of a search for order schedule information meeting the above search conditions, it displays the information in search result area 3221 if applicable information is found. Search result area 3221 displays part No., size, process, drawing No., type name, maker, corporation base, supplier name, subcontractor code, currency, scheduled amount and scheduled value of money for each month. Previous list button 3152, next list button 3153, input box 3154, button 3155, sort keys 3156 to 3158, sort in ascending order button 3159, sort in descending order button 3160 and linking screen 3161 are the same as above.

FIG. 167 shows the screen displayed by processing of search of the latest exchange rate information list display of step SCA12 shown in FIG. 156. Displays in display areas 3111 to 3114 and buttons 3121 to 3126 are the same as above. Exchange rate list area 3231 displays source currency, target currency, rate and date for each currency based on D/B 4a. For instance, 1 Australian dollar (AUD) is 91.85 yen (JPY). If

button 3232 of each currency is clicked on with a mouse, it proceeds to step SCA13 in FIG. 156 and performs processing of exchange rate history record information for that currency.

5 FIG. 168 shows the screen displayed by processing of exchange rate history record information of step SCA13 shown in FIG. 156. Displays in display areas 3111 to 3114 and buttons 3121 to 3126 are the same as above. Exchange rate history area 3241 displays
10 monthly history of the exchange rate from US dollar to Japanese yen for instance. It is possible to convert a local price to Japanese yen by indicating the exchange rate.

 As above, all part number system 4 can provide a
15 user with purchase (acceptance) record information, unit price history record information, order schedule information and exchange rate information. As for purchase record information, unit price history record information and order schedule information, information
20 of only applicable ones can be displayed after searching with a desired key.

[5. Cost cutting supporting system]

 FIG. 65 is a block diagram showing configuration of cost cutting supporting system (price information provision system) 5 illustrated in FIG. 1. Cost
25 cutting supporting system 5 has Web server 4001, application server 4002, Web DB server 4003, operation

machines 4004 and 4006. DB server 4003 has D/B 5a (FIG. 1).

Each base point (office) 4001 has computer 4012 for storing price information of each base point and user computer 31. Each base point computer 4012 stores price information such as verification unit prices of electronic parts and mechanical parts of its base point and supplies it to operation machine 4004. User computer 31 is a standard personal computer as a client for instance, and is capable of accessing cost cutting supporting system 5.

Personnel department computer 4013 stores personnel data and that data is supplied to operation machine 4004. Personnel data includes information on personnel change, and cost cutting supporting system 5 can automatically change a department to which a registered user belongs. It can also erase registration of the changed user as required.

Moreover, operation machine 4004 should desirably receive the above information online via a network.

On receipt of the above information, operation machine 4004 performs a process for comparing unit prices of electronic parts and mechanical parts of each base point and supplies it to operation machine 4006. Operation machine 4006 registers necessary information on D/B 5a in DB server 4003.

DB server 4003 has D/B 5a and manages

registration, deletion, update and search of that D/B
5a. Application server 4002 stores a computer program
and operates cost cutting supporting system 5 according
to the computer program. Web server 4001 stores a
5 computer program and performs unified screen display
according to the computer program. Web server 4001
makes various requests to application server 4002 and
receives its responses. Application server 4002 makes
various requests to DB server 4003 and receives its
10 responses. User computer 31 makes various requests to
Web server 4001 and receives its responses. For
instance, user computer 31 can download price
information from Web server 4001, edit the information
and upload it to Web server 4001. Web server 4001
15 supplies the uploaded information to operation machine
4006. Operation machine 4006 automatically collects
price information of each base point based on that
information and sends it by e-mail to user computer 31.

A user can know prices at which other base points
20 purchase the same electronic parts and mechanical
parts. It is also possible to download information
such as purchase prices at other base points purchasing
at lower prices than the user's base point. The user
can negotiate with a supplier over cost cutting based
25 on that information. It is also possible to upload the
negotiation results to Web server 4001 so as to prepare
a strategy for the next negotiation.

FIG. 66 is a schematic diagram showing configuration of D/B 5a in DB server 4003. D/B 5a has part numbers 5aa, process 5ab, drawing No. 5ac, supplier 5ad, verification (purchase) date 5ae, verification total amount 5af, verification unit price 5ag, exchange rate 5ah, cost cutting information 5ai, master information such as master (estimate) unit price 5aj, user information (user ID, password, user's belonging department, etc.) 5ak and security information 5al for electronic parts and mechanical parts of each base point.

FIG. 67 is a flowchart showing processing of cost cutting supporting system 5, and corresponds to processing of step S7 in FIG. 2. Step SDA1 displays the log-in screen shown in FIG. 68 on user computer 31 waiting for input of a user ID and input of a password. A user can enter a user ID in an area 4101 in FIG. 68 and a password in an area 4102. Security can be enhanced and a log-in by an illicit person can be prevented by having user ID 4101 and password 4102 entered.

The following two measures are taken in order to enhance security as displayed in display area 4105.

(1) In the case where there is no access (log-in) for 90 calendar days, the right to access (the right to log in) is automatically erased. In that case, an application for utilization must be submitted again on

utilization. (2) A user must change a password once a month for security protection. A password can be changed by clicking on password change button 4104 with a mouse.

5 If a user clicks on log-in button 4103 with a mouse, and if the entered user ID and password are correct, the user is logged in and proceeds to step SDA2.

10 Step SDA2 displays a list screen shown in FIG. 69. Display area 4111 indicates a date of information. Display area 4112 indicates a log-in user ID (user ID). Display area 4113 indicates a date of log-in. Display area 4114 indicates an IP address of log-in. Based on this IP address, the department to which the user
15 belongs can be identified. As the source can be identified by the displays of display areas 4112 to 4114 when a hard copy of the screen is made, it is possible to prevent leakage of information to outside. To be more specific, there is an effect of keeping a
20 user from making a hard copy since information on users who made a hard copy is displayed. Moreover, display areas 4111 to 4114 can also be displayed in FIG. 70 to FIG. 72 shown later.

25 Title area 4131 indicates "Cost cutting supporting data number list". List area 4133 displays, as to each base point, verification (purchase) data of part No. higher-priced than other base points and verification

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data of part No. lower-priced than other base points.
As the verification data, the number of such cases and
kinds of the parts are displayed. For instance, it
shows that there are 63 cases of part No. of mechanical
5 parts higher-priced than other base points as to office
B.

If mechanical parts download button 4134 is
clicked on with a mouse while pressing the shift key on
the keyboard, a user proceeds to step SDA4 via step
10 SDA3 in FIG. 67 to perform downloading. If mechanical
parts download button 4134 is clicked on, verification
data of other base points can be downloaded as to part
No. (parts) of mechanical parts higher-priced at office
B than other base points. If electronic parts download
15 button 4135 is clicked on, verification data of other
base points can be downloaded as to part No. of
electronic parts higher-priced at office B than other
base points. If mechanical parts download button 4136
is clicked on, verification data of other base points
20 can be downloaded as to part No. of mechanical parts
lower-priced at office B than other base points. If
electronic parts download button 4137 is clicked on,
verification data of other base points can be
downloaded as to part No. of electronic parts lower-
25 priced at office B than other base points. As for
downloading, Web server 4001 in FIG. 65 receives
verification data from operation machine 4006, and that

verification data is downloaded from Web server 4001 to user computer 31 to be stored thereon.

FIG. 70 shows the verification data screen displayed on computer 31 after downloading.

5 Verification data list area 4141 displays company base point 4141a, part No. 4141b, process 4141c, drawing No. 4141d, supplier 4141e, verification date 4141f and currency 4141g of the part.

FIG. 71 is the verification data screen continued
10 to the right of list area 4141 shown in FIG. 70. List area 4141 displays, in addition to the above items, verification total amount in corresponding month 4141h, latest verification unit price in local currency 4141i, verification total money value in local currency (total
15 monthly sum) 4141j, average exchange rate of corresponding month (it is 1 if currency 4141g is Japanese yen) 4141k, latest verification unit price in yen equivalent (latest verification unit price in local
20 verification total money value in yen equivalent (verification total money value in local currency × average exchange rate) 4141l and
verification total money value in yen equivalent (verification total money value in local currency × average exchange rate) 4141m of the part.

FIG. 72 is the verification data screen continued
25 to the right of list area 4141 shown in FIG. 71. List area 4141 displays, in addition to the above items, difference of verification unit price in yen equivalent as to a compared part (verification unit price of the

office - the lowest verification unit price of other
offices) 4141n, difference of verification total money
value in yen equivalent as to a compared part
(difference of verification unit price \times verification
total amount) 4141o, unit price after cost cutting in
local currency 4141p, input date 4141q and results of
cost cutting negotiation 4141r of the part.

It is possible, by referring to difference of
verification unit price 4141n and difference of
verification total money value 4141o, to know a
difference between a verification price of the office
and those of other offices, which allows a judgment to
be made on whether or not it is worth negotiating with
a supplier over cost cutting. In the case where cost
cutting is negotiated, users of the offices enter unit
price after cost cutting 4141p, input date 4141q and
results of cost cutting negotiation 4141r. If entered,
it proceeds to step SDA5 in FIG. 67 to perform input
processing. In results of cost cutting negotiation
4141r, "the price after cost cutting is applicable from
Oct. 1988" for instance is entered in the case where
the negotiation was successful, and a reason such as no
cost cutting is possible due to fixed prices is entered
in the case where the negotiation was unsuccessful.
The offices can plan a strategy for the next cost
cutting negotiation based on results of cost cutting
negotiation 4141r.

Moreover, in the case where the cost cutting negotiation was successful, users of the offices enter unit price after cost cutting 4141p and input date 4141q on which they entered unit price after cost cutting 4141p and/or results of cost cutting negotiation 4141r.

When display in list area 4141 is terminated, it returns to step SDA2 in FIG. 67 and displays the list screen in FIG. 69. If upload button 4132 in FIG. 69 is clicked on with a mouse, it proceeds to step SDA6 via step SDA3 in FIG. 67 and performs uploading. To be more specific, verification data of list area 4141 shown in FIGS. 70 to 72 is uploaded from user computer 31 shown in FIG. 65 to Web server 4001. Web server 4001 receives the uploaded unit price after cost cutting and results of cost cutting negotiation and so on from user computer 31 and transfers them to operation machine 4006.

Next, in step SDA7 in FIG. 67, operation machine 4006 automatically collects price information of the base points based on the uploaded information to reflect it on data from the next month onward. Operation machine 4006 also sends the collecting results to user computer 31 by e-mail. It then returns to step SDA2 and displays the list screen shown in FIG. 69.

In FIG. 69, if menu button 4121, back page button

4122, log-out button 4123, help button 4124 or mail
button 4125 is clicked on with a mouse, it proceeds to
step SDA8 via step SDA3 in FIG. 67. If menu button
4121 is clicked on, it displays this list screen shown
5 in FIG. 69. If back page button 4122 is clicked on, it
returns to a preceding display screen. If log-out
button 4123 is clicked on, the procurement system comes
to an end. If help button 4124 is clicked on, it
displays the help screen. If mail button 4125 is
10 clicked on, mail transmission or a check of received
mail can be performed. These buttons 4121 to 4125 can
also be displayed on verification data screen displayed
in FIGS. 70 to 72.

As above, in the case where there is variation in
15 parts costs and product costs among the offices, cost
cutting supporting system 5 can provide users of the
offices with differences in costs as to the same parts
among the offices. Each of the offices can efficiently
negotiate cost cutting of the parts with a supplier by
20 acquiring information on differences in costs between
itself and other offices. And it is possible to
effectively plan a strategy for the next cost cutting
negotiation by uploading results of the negotiation.

Moreover, cost cutting supporting system 5 can be
25 applied not only to a past verification price but also
to a master (estimated) price. It can also be applied
to product prices in addition to parts prices.

[6. Procurement record system]

FIG. 73 is a block diagram showing configuration of procurement record system (dealing record information providing system) 6 illustrated in FIG. 1.

5 Procurement record system 6 has Web server 5001, application server 5002, Web DB server 5003 and operation machine 5004. DB server 5003 has D/B 6a (FIG. 1).

Each base point (office) computer 5011 stores its
10 own verification data (including verification money value) and data for value (including sum of supply for value) and supplies them to operation machine 5004. Verifivation money values are prices of purchased parts and so on. Sum of supply for value is a price at which
15 the company makes a purchase for value and delivers it to a supplier. A supplier is supplied for value for various reasons, such as the company purchasing parts collectively from a plurality of suppliers for cost reduction or intending to supply parts and so on in a
20 stable manner. In addition, each base point computer 5011 is capable of accessing procurement record system 6.

Personnel department computer 5012 stores personnel data and that data is supplied to operation
25 machine 5004. Personnel data includes information on personnel change, and procurement record system 6 can automatically change a department to which a registered

user belongs. It can also erase registration of the changed user as required.

Moreover, operation machine 5004 should desirably receive the above information online via a network.

5 Operation machine 5004 receives the above information, and registers verification data and data for value on DB 6a in DB server 5003.

DB server 5003 has DB 6a and manages registration, deletion, update and search of that DB 6a. Application
10 server 5002 stores a computer program and operates procurement record system 6 according to the computer program. Web server 5001 stores a computer program and performs unified screen display according to the computer program. Web server 5001 makes various
15 requests to application server 5002 and receives its responses. Application server 5002 makes various requests to DB server 5003 and receives its responses. Each base point computer 5011 makes various requests to Web server 5001 and receives its responses. For
20 instance, each base point user's computer 5011 instructs Web server 5001 to search for verification data or data for value in DB 6a on a predetermined condition. Application server 5002 searches for verification data or data for value in DB 6a on a
25 predetermined condition, and collects it for each first half, second half and year. Web server 5001 displays search results meeting the above condition on the

screen of each base point computer 5011. The users of the base points can know verification data and data for value by base point, by supplier or by item.

FIG. 74 is a schematic diagram showing configuration of DB 6a in DB server 5003. DB 6a has verification data by base point/by supplier/by item 6aa, data for value by base point/by supplier 6ab, user information (user ID, password, user's belonging department, etc.) 6ac and security information 6ad.

FIG. 75 is a flowchart showing processing of procurement record system 6, and corresponds to processing of step S8 in FIG. 2. Step SEAl displays the log-in screen shown in FIG. 77 on user computer 5011 (FIG. 73) waiting for input of a user ID and input of a password. A user can enter a user ID in area 5101 and a password in area 5102 in FIG. 77. Security can be enhanced and a log-in by an illicit person can be prevented by having user ID 5101 and password 5102 entered.

The following two measures are taken in order to enhance security as displayed in display area 5105.

(1) In the case where there is no access (log-in) for 90 calendar days, the right to access (the right to log in) is automatically erased. In that case, an application for utilization must be submitted again on utilization. (2) A user must change a password once a month for security protection. A password can be

changed by clicking on password change button 5104 with a mouse.

If a user clicks on log-in button 5103 with a mouse, and if the entered user ID and password are correct, the user is logged in and proceeds to step SEA2.

Step SEA2 displays a menu screen shown in FIG. 78. Display area 5111 indicates a date of information. Display area 5112 indicates a log-in user ID (user ID). Display area 5113 indicates a date of log-in. Display area 5114 indicates an IP address of log-in. Based on this IP address, the department to which the user belongs can be identified. As the source can be identified by the displays of display areas 5112 to 5114 when a hard copy of the screen is made, it is possible to prevent leakage of information to outside. To be more specific, there is an effect of keeping a user from making a hard copy since information on users who made a hard copy is displayed. For a general user, FIG. 79 rather than FIG. 78 is displayed after entering a password.

Menu items display "I. Procurement record search", "II. User maintenance" and "III. Preference information". If procurement record search display button 5131 is clicked on with a mouse, it proceeds to step SEA4 in FIG. 75 and performs search processing of procurement record. Search processing of procurement

record searches for verification data or data for value
meeting predetermined conditions and performs
collection processing. If user maintenance update
button 5132 is clicked on with a mouse, it proceeds to
5 step SEA5 in FIG. 75 and performs user maintenance
processing. The user maintenance processing refers to
user information and log information registered in DB
6a or registers user information and security
management. If preference information update button
10 5133 is clicked on with a mouse, it proceeds to step
SEA6 in FIG. 75 and performs processing of preference
information. Processing of preference information sets
up information required for the procurement record
system operation.

15 If menu button 5121, back page button 5122, log-
out button 5123 or mail button 5124 is clicked on with
a mouse, it proceeds to step SEA7 in FIG. 75 and
performs other processing. If menu button 5121 is
clicked on, it displays this list screen shown in FIG.
20 78. If back page button 5122 is clicked on, it returns
to a preceding display screen. If log-out button 5123
is clicked on, the procurement system comes to an end.
If mail button 5124 is clicked on, mail transmission or
a check of received mail can be performed.

25 FIG. 76 is a flowchart showing details of search
processing of procurement record of step SEA4 shown in
FIG. 75. Step SEB1 displays the search screen shown in

FIG. 79. Display areas 5112 to 5114 and buttons 5121 to 5124 are the same as above. The search screen has collection method selection area 5141, condition input area 5142 and sub-menu for condition input area 5143.

5 FIG. 80 is an enlarged view of the above collection method selection area 5141. A user selects a method of collecting procurement records in collection method selection area 5141. Selection items displayed are "A. Purchase record by item and contact point", "B. Purchase record by item and supplier", "C. Purchase record by item and contact point and supplier", "D. Purchase record by item and supplier and contact point", "E. Purchase record by contact point and supplier", "F. Purchase record by contact point and supplier (supply for value)", "G. Purchase record by contact point and item", "H. Purchase record by contact point and supplier and item", "I. Purchase record by contact point and item and supplier", "J. Purchase record by supplier and contact point", "K. Purchase record by supplier and contact point (supply for value)", "L. Purchase record by supplier and item", "M. Purchase record by supplier and contact point and item" and "N. Purchase record by supplier and item and contact point". Any of the items can be

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FIG. 81 is an enlarged view of the above condition input area 5142 and sub-menu for condition input area

5143. In condition input area 5142, business year of record, item, supplier, search area and search of contact point can be entered. Other than entering these conditions directly, it is possible to enter them

5 by using sub-menu for condition input area 5143. For instance, if item button 5161 is clicked on with a mouse, sub-menu for condition input area 5143 displays item codes and names. A desired item can be selected out of this sub-menu for condition input area 5143.

10 For instance, if button No. 29 in sub-menu for condition input area 5143 is clicked on with a mouse, "M290" is automatically entered as an item of condition input area 5142. A user can easily and simply enter a condition item by utilizing sub-menu for condition
15 input area 5143. Sub-menu for condition input area 5143 can also be utilized for a supplier condition. If clear condition button 5163 is clicked on with a mouse, a condition in condition input area 5142 can be cleared. If search button 5162 is clicked on with a
20 mouse, it proceeds to step SEB2 in FIG. 76 and searches for procurement record (dealing record) information meeting the above condition. It then proceeds to step SEB3 and displays the search results screen shown in FIG. 82.

25 FIG. 82 shows the search results screen. Displays areas 5112 to 5114 and buttons 5121 to 5124 are the same as above. The search results screen has search

condition display area 5171 and search collection results area 5172.

FIG. 83 is an enlarged view of the above search condition display area 5171. Collection method display area 5181 displays a collection method selected in collection method selection area 5141. Search condition display area 5183 displays the condition entered in condition input area 5142 in FIG. 81. Price unit area 5183 displays the unit of the amount indicated in search collection results area 5172 in FIG. 82.

FIG. 84 is an enlarged view of search collection results area 5172 in FIG. 82. Search collection results area 5172 displays the amount of money meeting the above condition collected by base point, month, first half, second half and year. The amount of money is in the units of 1,000 yen for instance. A first half is January to June, and a second half is July to December for instance. If the amounts of the months are displayed in one horizontal line all the amounts cannot be displayed on one screen or on one sheet of paper so that they lie partly off the screen or sheet. All the amounts can be displayed on one screen or on one sheet of paper and thus the amounts can be compared more easily by displaying the first half in the upper part and the second half in the lower part and displaying the amounts of the year divided into a

plurality of lines.

If menu button 5121, back page button 5122, log-out button 5123 or mail button 5124 in FIG. 82 is clicked on with a mouse, it proceeds to step SEB4 in FIG. 76 and performs the same processing of each button as above.

As above, the procurement record system searches for procurement record (dealing record) information of a predetermined condition and performs collection processing. This procurement record information includes verification money value and supplied sum for value. A user can plan various dealing strategies by referring to these collection results. For instance, the risk due to concentration on deals with a specific supplier can be avoided by performing collection for each individual supplier and calculating a ratio of dealing with each individual supplier, and thus a strategy for dispersing the ratio of dealing among suppliers can be planned. It is also possible to increase or decrease the number of suppliers based on the ratio of dealing with each individual supplier. In addition, it is possible to estimate or coordinate future procurement by analyzing time-wise transition of procurement records.

FIG. 85 is a flowchart showing processing of procurement record data management system. This procurement record data management system is a system

for managing procurement record data used in the above
procurement record system 6. Step SEC1 displays the
menu screen shown in FIG. 86. Menu items display
"Registration", "Maintenance", "Term end processing",
5 "Print", "Log information" and "End". If registration
button 5191 is clicked on with a mouse, it proceeds to
step SEC3 in FIG. 85 and performs registration
processing. The registration processing registers
records, records for value, items and supplier
10 information. If maintenance button 5192 is clicked on
with a mouse, it proceeds to step SEC4 in FIG. 85 and
performs maintenance processing. The maintenance
processing performs maintenance of a company base point
table. If term end processing button 5193 is clicked
15 on with a mouse, it proceeds to step SEC5 in FIG. 85
and performs term end processing. Term end processing
deletes records and records for value data and backs up
the deleted data. Details of term end processing will
be described later by referring to FIG. 87. If print
20 button 5194 is clicked on with a mouse, it proceeds to
step SEC6 in FIG. 85 and performs print processing.
The print processing prints items, corporation bases
and supplier information. If log information button
5195 is clicked on with a mouse, it proceeds to step
25 SEC7 in FIG. 85 and performs log information
processing. Log information processing outputs or
deletes log information. If end button 5196 is clicked

on with a mouse, it proceeds to step SEC8 in FIG. 85 and terminates the procurement record data management system.

FIG. 87 is a display screen of term end processing of the above step SEC5, and is displayed by clicking on term end processing button 5193 in FIG. 86 with a mouse. If all the past procurement record data is stored on DB 6a, the data amount becomes so much that search speed slows down and storage capacity of DB 6a becomes insufficient. Thus, procurement record data of four years ago or earlier is deleted and also backed up. DB 6a stores only procurement record data of past three years. The term end processing screen displays first area 5207 and second area 5208.

Year column 5201 automatically displays A.D of four years ago so as to delete procurement record data of four years ago in principle and back it up in text form. Year column 5201 can also have another year entered. Procurement record data is deleted by year. Moreover, it is also feasible to delete all the data at and before a predetermined point of time. First area 5207 displays a deletion check column, deleted data name and the number of cases. Data to be deleted or backed up can be selected by clicking on deletion check column 5202 with a mouse. To be more specific, verification data and/or data for value can be selected. Second area 5208 displays a selection check

column, name of data to be backed up in a text form and the number of cases. Data to be backed up can be selected by clicking on selection check column 5203 with a mouse. To be more specific, supplier data, item data and/or corporation base data can be selected.

Next, if exec button 5205 is clicked on with a mouse, it processes data checked in the above deletion check column 5202 and selection check column 5203. If set button 5204 is clicked on with a mouse, a path name of a file to be backed up can be set. If button 5206 is clicked on with a mouse, it terminates term end processing.

As above, it is possible, by performing term end processing, to delete and back up procurement record data of four years ago and earlier so that space capacity of a storage device can be increased and search speed can be improved.

[7. Supplier card information system]

FIG. 88 is a block diagram showing configuration of supplier card information system (supplier card information providing system) 7 illustrated in FIG. 1. Supplier card information system 7 has Web server 6001, application server 6002, Web DB server 6003, operation machine 6004 and image scanner 6005. DB server 6003 has DB 7a (FIG. 1).

Supplier 6011 enters supplier information on a supplier card that is a paper medium, and provides it

to supplier card information system 7. Operation machine 6004 reads the supplier card that is a paper medium with image scanner 6005, and converts it into image information in GIF format to register it on DB 7a in DB server 6003. DB 7a has supplier name and so on registered in addition to image information of the supplier card.

Personnel department computer 6012 stores personnel data and that data is supplied to operation machine 6004. Personnel data includes information on personnel change, and supplier card information system 7 can automatically change a department to which a registered user belongs. It can also erase registration of the changed user as required. Moreover, operation machine 6004 should desirably receive the above personnel data online via a network.

DB server 6003 has DB 7a and manages registration, deletion, update and search of that DB 7a. Application server 6002 stores a computer program and operates supplier card information system 7 according to the computer program. Web server 6001 stores a computer program and performs unified screen display according to the computer program. Web server 6001 makes various requests to application server 6002 and receives its responses. Application server 6002 makes various requests to DB server 6003 and receives its responses.

User computer 31 is a standard personal computer

as a client for instance, and is capable of making various requests to Web server 6001 and receiving its responses. For instance, an instruction can be given to search for a supplier card of a desired supplier.

5 Web server 6001 searches for that supplier card of the supplier via application server 6002 and DB server 6003, and displays image information of that supplier card on the screen of user computer 31. A user within the company can instantly acquire the desired supplier
10 card.

FIG. 89 is a schematic diagram showing configuration of DB 7a in DB server 6003. DB 7a has supplier information on each supplier 6020, user information (user ID, password, user's belonging
15 department, etc.) 7ah and security information 7ai. Supplier information on each supplier 6020 includes supplier code 7aa, supplier name 7ab, supplier name (kana) 7ac, corporation code 7ad, card No. 7ae and registration year 7af in addition to image information
20 of a supplier card 7ag.

FIG. 90 is a flowchart showing processing of the supplier card information system, and corresponds to processing of step S9 in FIG. 2. Step SFA1 displays the log-in screen shown in FIG. 92 on user computer 31
25 (FIG. 88) waiting for input of a user ID and input of a password. A user can enter a user ID in area 6101 and a password in area 6102 in FIG. 92. Security can be

enhanced and a log-in by an illicit person can be prevented by having user ID 6101 and password 6102 entered.

5 A user can change a password for security protection by clicking on password change button 6104 with a mouse. If a user clicks on log-in button 6103 with a mouse, and if the entered user ID and password are correct, the user is logged in and proceeds to step SFA2.

10 Step SFA2 displays the menu screen shown in FIG. 93. This is a screen not displayed to a general user but to an administrator. Display area 6111 indicates a date of information. Display area 6112 indicates a log-in user ID (user ID). Display area 6113 indicates
15 a date of log-in. Display area 6114 indicates an IP address of log-in. Based on this IP address, the department to which the user belongs can be identified. As the source can be identified by the displays of display areas 6112 to 6114 when a hard copy of the
20 screen is made, it is possible to prevent leakage of information to outside. To be more specific, there is an effect of keeping a user from making a hard copy since information on users who made a hard copy is displayed.

25 Menu items display "I. Supplier card information search", "II. User maintenance" and "III. Preference information". If supplier card information search

display button 6131 is clicked on with a mouse, it proceeds to step SFA4 in FIG. 90 and performs search processing of supplier card information. Search processing of supplier card information searches for and displays a supplier card meeting predetermined conditions. If user maintenance update button 6132 is clicked on with a mouse, it proceeds to step SFA5 in FIG. 90 and performs user maintenance processing. The user maintenance processing refers to user information and log information registered in DB 7a and registers user information and security management. If preference information update button 6133 is clicked on with a mouse, it proceeds to step SFA6 in FIG. 90 and performs processing of preference information. Processing of preference information sets up information required for the supplier card information system operation.

If menu button 6121, back page button 6122, log-out button 6123 or mail button 6124 is clicked on with a mouse, it proceeds to step SFA7 in FIG. 90 and performs processing of each button. If menu button 6121 is clicked on, it displays the menu screen shown in FIG. 93. If back page button 6122 is clicked on, it returns to a preceding display screen. If log-out button 6123 is clicked on, the procurement system comes to an end. If mail button 6124 is clicked on, mail transmission or a check of received mail can be

performed.

FIG. 91 is a flowchart showing details of search processing of supplier card information of step SFA4 shown in FIG. 90. Step SFB1 displays the search screen

5 shown in FIG. 94. Displays in display areas 6112 to 6114 are the same as above. In condition input area 6141, year 6142, supplier code 6143, supplier name 6144 and supplier name in kana 6145 can be entered.

Moreover, it is not necessary to enter all of supplier
10 code 6143, supplier name 6144 and supplier name in kana 6145, but entering one of them is sufficient. The above conditions can be cleared by clicking on

condition clear button 6147 with a mouse. In order to assist the above condition input, search button 6146

15 can be used. If search button 6146 is clicked on with a mouse, it displays the search results list 6152 on the right. Search results list 6152 displays a list of supplier codes, supplier names and supplier names in

kana. A user can select a desired supplier out of
20 search results list 6152. To be more specific, if supplier code button 6153 is clicked on with a mouse, it automatically displays supplier codes, supplier names and supplier names in kana corresponding to the

button in condition input area 6141 on the left. A
25 user can easily enter a condition in condition input area 6141 by selecting a supplier out of list 6152.

Next, if "View a supplier card" button 6161 is

clicked on with a mouse, it searches for a supplier card information meeting the above conditions in step SFB2 in FIG. 91 and displays supplier card view screen shown in FIG. 95 in step SFB3. On the other hand, if
5 "log-out" button 6162 in FIG. 94 is clicked on with a mouse, the procurement system comes to an end.

FIG. 95 shows the supplier card view screen. Displays in display areas 6112 to 6114 are the same as above. Condition display area 6179 displays the
10 supplier code, supplier name and supplier name in kana entered on the above condition input screen. Also, in the middle of the screen, image 6181 that is an image of a supplier card read by an image scanner is displayed. Supplier card image 6181 is an image of a
15 supplier card of the supplier entered on the above condition input screen. That supplier card lists preparation date, preparer, supplier code, company name, head office key telephone number, fax number, head office location, capital, number of employees,
20 representative, names of shareholders, executives, history, location map and so on. As a supplier card has a supplier location map on it, it is highly worthwhile providing a user with image information of a supplier card of a paper medium read by an image
25 scanner. In addition, it is highly worthwhile using image information based on a paper medium considering convenience thereof. It is also possible to receive

supplier card information from a supplier by online communication of computers. However, it is preferable to receive a supplier card of a paper medium in the case there is a supplier with no computer communication equipment in place.

Year area 6177 displays a year in which the supplier card was registered. As for supplier cards, an updated one is submitted by a supplier each year. Therefore, there may be a plurality of supplier cards for each supplier each year. If a year is entered in year area 6177, it displays supplier card image of input year 6181. If another year is entered in year area 6177, it proceeds to step SFB5 via step SFB4 in FIG. 91 to search for a supplier card not based on a supplier (a supplier code) but based on a corporation (a corporation code). The reason will be described as follows. In the case where a plurality of supplier codes belong to one corporation code, that is, in the case where a plurality of offices (suppliers) belong to one company (corporation) for instance, there may be only one supplier card for the plurality of suppliers. There are also cases where a company organization is changed. For instance, as shown in FIG. 96, company A (corporation) in 1997 had three suppliers of office A, office B and office C. However, there is a case where office C no longer exists and office D is newly established in 1998. To be more specific, company A in

1998 had three suppliers of office A, office B and office D. In this case, if the year is switched to 1997 in a state of displaying office D's supplier card of 1998, there is no longer office D and it may cause inconvenience. Thus, in this case, it makes a search by switching the year based on a corporation code of office D (company A) and displays a supplier card of company A in 1997. After the search, it returns to step SFB3 in FIG. 91 and displays the supplier card.

10 In FIG. 95, if search screen button 6171, head page button 6172, previous page button 6173, next page button 6174, end page button 6175, expansion/reduction button 6176 or log-out button 6178 is clicked on with a mouse, it proceeds to step SFB6 via step SFB4 in FIG. 91 and performs processing of each button. If search screen button 6171 is clicked on, it returns to step SFB1 in FIG. 91 and displays the search screen in FIG. 94. If head page button 6175 is clicked on, it displays a supplier card at the head of all supplier cards. If previous page button 6173 is clicked on, it displays a supplier card of a preceding page. If next page button 6174 is clicked on, it displays a supplier card of a next page. If end page button 6175 is clicked on, it displays a supplier card at the end of all the supplier cards. If expansion/reduction button 6176 is clicked on, it allows supplier card image 6181 to be switched between expanded display and reduced